Campaign 2 Cartographer

Map Making for RPGs

User's Guide

ProFantasy Software

PROFANTASY SOFTWARE PRESENTS

Campaign Cartographer 2
Map Making for RPGs

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PROFANTASY SOFTWARE CAMPAIGN CARTOGRAPHER 2

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INTRODUCTION

Welcome to Campaign Cartographer 2, the core of ProFantasy Software's RPG software. The fact you are reading this means that you have made two wise decisions. First, you have chosen to create your maps with CC2. Second, you have started to read the manual. Please continue. Whatever you play, CC2 will help you improve the quality of your game.

Clear your mind...

You may well be used to paint programs. In fact, you may even have tried to create maps with a paint program. And if you have, you'll know that they're not very suited to the job. CC2, on the other hand, is superb at map-making. There is a reason for this difference...

A paint program thinks of a picture as a grid of dots. All it knows about the picture is how big it is (how many dots across and up) and the color of each dot. Once you have drawn a shape it is tricky to change, especially if other shapes have been drawn on-top.

CC2 thinks of a picture in a different way. It thinks of a picture as a collection of entities (drawing objects), with each entity having a set of properties such as color, width, start-point and end-point. This is ideal for map-making:

a. You can go back and change the properties of any entity at any time, even after other shapes have been drawn on-top.

b. A CC2 map has no fixed size. If you need more canvas, you simply zoom out.

c. When you zoom in, you see clearer definition, not bigger dots,

d. Entities are attached to layers. By saying which layers are visible, you can change the visible content to suit a particular purpose.

e. The file size is related to the number of objects, not the picture size. A road 1,000 miles long takes up exactly the same memory as a road 1 mile long.

f. Objects can be complex, and even trigger actions. For example, a city symbol can be combined with a link object so that when you click on it, the city map opens.

As you might expect, because CC2 and paint programs think differently, they work differently too. So clear your mind of any preconceptions you have.

You will find that CC2 is easy to use, but expect it to work differently to a paint program!

Sources of information

This book leads you through the concepts and techniques used to create maps with CC2. It starts with the basics, making no assumptions about your knowledge of CC2.

CC2's help system contains reference information **about** every command, an overview of concepts and a large how-to section. If you can't find the answer to a CC2 question in this book, look in the help system.

ProFantasy's web site, www.profantasy.com, contains downloadable updates, resources, documentation and the latest technical support answers.

Installing CC2

Place the CC2 compact disc into your CD-ROM drive. On most computers there will be a few seconds of whirring, then you will see a window showing the CD's contents. If this doesn't happen, double-click **on My Computer,** then on the icon for your CD-ROM drive.

To install CC2, double-click on the **Setup** icon, then follow the on-screen instructions.

During the installation you will be asked to give your name, company and CC2 serial number. Your unique serial number is on the back of the CD case. If the company box is blank, you will have to enter something, even if it is only a blank space!

We recommend that you use a minimum screen resolution of 800x600 or CC2's screen icons won't appear correctly (look-up "Resolution, Monitor, Changing resolution" in Windows@ Help). If your system isn't capable of at least 800 x 600 resolution, see **System.txt** in CC2's **System** folder.

The value of maps

In the beginning, there were none. Then there were a few, but you had to put up with a world you could fall off. Today, maps are super-accurate and so commonplace that you can probably find one in your local convenience store.

The value of maps clearly depends on the era in which your game is set, and whether it is a fantasy game, or true-to-life.

In our own history, maps have always been incredibly valuable tools used for political and commercial exploitation. In the 16th Century the Spanish and Portuguese avoided the new print processes and kept to hand drawn maps which were less likely to fall into enemy hands. And while modern maps may be accurate in shape, they're only as up-to-date as the last time

information was gathered. Printed maps don't show changes such as blown-up bridges, or dynamic information such as troop movements.

In a fantasy world, charted by reticent sages and unforthcoming wizards, maps available to the average adventurer should be sparse and maybe even dangerously inaccurate. A map should be a prize worth having. Players should not be allowed to see a full, accurate map of their own lands, let alone the world, without a long struggle.

The CC2 software you have in your hands is capable of mapping Earth in precise and near infinite detail, even recording abstract detail such as mineral locations, ocean currents and population movement. Just because you now have this power, please don't be tempted to give your players more than they deserve!

VIEWING AND PRINTING MAPS

Before getting involved with creating maps, let's see what CC2 can do.. .

---

1 > Start CC2.

> When you installed CC2, you were given the option to add a CC2 shortcut to your desktop. If you said Yes to this, you can click the CC2 icon on your main Windows@ screen.

> If you haven't got a shortcut on your desktop, click Windows@ Start menu, then click Programs, then click Campaign Cartographer 2.

> The first time you start CC2, you see the CC2 Welcome Screen. Subsequently you'll see the last map you used.
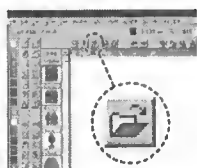
2 < Click the **Open** icon.

> CC2 asks if you would like to save the changes to your map. Click **No.**

> You see the Load Drawing dialog box.

3 > Change to CC2's **Examples\Maps** folder, click on **Carriad.fcw** and then click the **Open** Button.

> The Carriad example map loads.

Zooming

One of the great things about CC2's is how it lets you "zoom in" to get a close-up view of an area of your map or "zoom out" to see more of the map at a reduced size.

CC2 has six zoom icons, grouped at the top right of the drawing window. There is also a **View** menu, containing more view controlling commands. For now though, we will only worry about the icons:

Zoom Window. CC2 asks you to click opposite corners of a window (an area) to which you would like to zoom. CC2 will zoom in so that the window you pick fills the screen.

Zoom Extents. CC2 redisplays the map so it completely fills the screen.

Zoom In CC2 zooms in by a factor of 2, increasing the magnification.

Zoom OutCC2 zooms out by a factor of 2, reducing the magnification.

ZOOM Last CC2 goes back to the previous view of the map.

Redraw When you edit a map you'll find that, where you make changes, CC2 sometimes leaves a little temporary clutter on screen. **Redraw** cleans up the clutter.

1 > Click on the **Zoom Window** icon.
The Command Line reads *zoom window* : and the pointer changes to crosshairs.

2 > Click (don't drag) at the bottom left of the island called Munsch.
The Command Line reads Opposite corner:. Now, when you move the mouse you see a box shrink and grow. This is CC2 showing you the window it will zoom to.

3 > Put the opposite corner of the window at the top right of the island then click again.
CC2 zooms in to the island. You can carry on zooming in like this as far as you like.

4 > Click **Zoom Extents** to see the whole map again.

5∨ Click **Zoom Window** and pick a window around **Carag,** the island to the north.
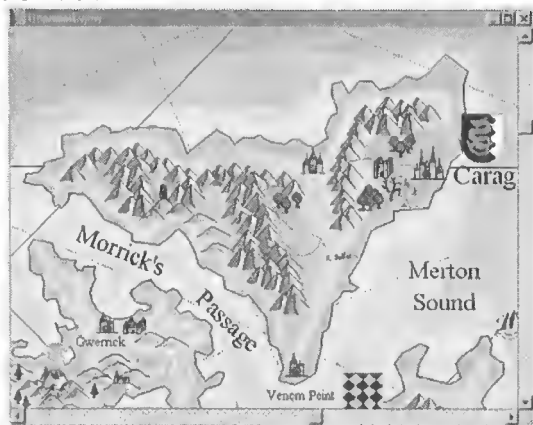
Layers

Maps are built up on layers. By hiding and showing layers you can
change the visible content to suit a particular purpose – without having to
draw a new version. For example, by putting all secrets on the SECRET
layer, you can quickly hide them from unauthorized eyes!

1 ➢ Click the layer indicator L: COAST/SEA on the Status Bar.

| T. 630.00000,760.00000 | ■ | P:0.000 mm | W 0.00000 | L. COAST/SEA | LS: Solid | FS Solid |
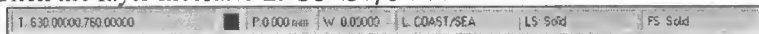
You see the Select Layer dialog box which shows the list of layers
used in the map.
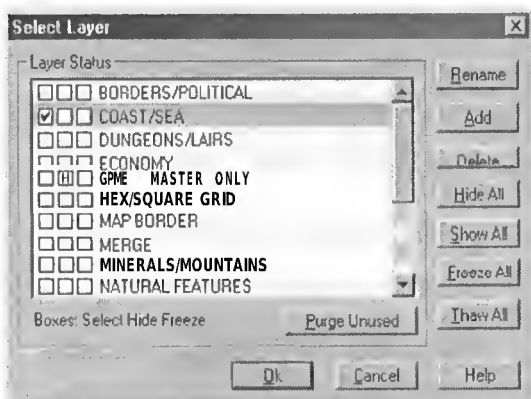
Next to each layer name are three small boxes.

•   The left box is ticked if the layer is the current layer. In this
    case the current layer is COAST/SEA.

•   The middle box contains a small **H** if the layer is hidden. In
    this case GAME MASTER ONLY is hidden.

•   The right box contains a small **F** if layer is frozen (protected).

2 > Click the small **H** in the box next to GAME MASTER ONLY.
    The **H** is removed. The layer will now be visible.

3   Click on the OK button
     The map redraws with the GAME MASTER ONLY layer visible.
     You should see an angel and a crown which were not there before.
     These mark a site of Good and the location of a Royal Pretender.

Layers have many other powerful uses, which are explored later in
this book. For now I only want to worry about how they affect map
viewing   and   printing.

Printing

CC2 can print any view of any map either to fit the page, or to a precise scale factor (e.g. 1:72 for miniatures), or *tiled* across more than one sheet of paper.

Hidden layers do not print.
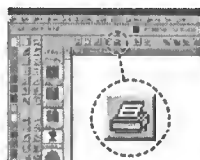
< Click on the **Print** icon.

You see the Print Drawing dialog box, which has five sections – Printer, View to print, Scaling, Tiling and Options.
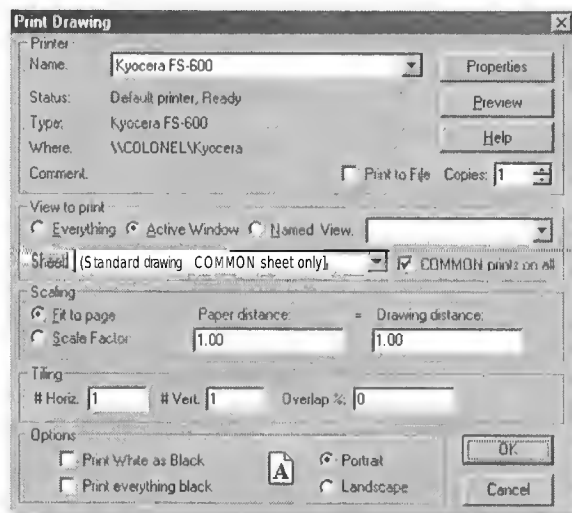
Printing without worrying about the options

The Print dialog box gives you a great deal of control **about** how the printed map will look but, with that control, comes options. If you want to print without worrying about the options, these are the settings you want:

✓	**Printer**	Select a working printer
✓	**View to print**	**Everything**
✓	**Scaling**	**Fit to page**
✓	**Tiling**	#Horiz=1,#Vert=1
✓|	**Print White as Black**	**Not checked**
✓|	**Portrait or Landscape**	As appropriate

Then click OK.

Printing using the options

1 ➢ Select the View to print.

Everything	The whole map will print, regardless of the current view. To see what CC2 considers is everything, click Zoom Extents [Q].
Active Window	The current view will print.
Named View	From the View menu you can save views of a map. If you have previously saved views of the map, they will be listed here.
Sheet	Sheets are an advanced feature of CC2 detailed in CC2's help system, The normal value is (Standard drawing – COMMON sheet only),

2 ➢ Select the Scaling XI would like.

Fit to page	Scales the selected view to best fit your paper size and orientation.
Scale factor	• Paper distance refers to the final printed copy. • Drawing distance refers to distances as measured from the drawing. To measure distances on the drawing, select Info Menu > > Distance and then pick two points to measure between. For example, if you use Distance to measure the east-west size of Carag island, you'll find it is approximately 425 units across. If you set the Paper Distance to 1" and Drawing Distance to 100, the print will be at 100 units to the inch. The printed Carag island would therefore measure 4.25 inches across.

3 > Select the number of pages for print Tiling.

CC2 can create oversized prints by tiling across more than one sheet of paper.

# Horiz # Vet-t	Sets how many sheets the print will use. A value of 1 in each box gives a 1 page print.
Overlap 0/0	Sets the overlap between sheets. A value of 0 means there is no overlap. To make it easier to stick sheets together, set the overlap to 5 % .

GETTING STARTED

This chapter introduces you to the building-blocks of CC2 maps: entities and their properties. To keep things simple, we'll start off with basic entities such as lines, circles and polygons. Once you're comfortable with these concepts, it's then a very small step to continental landmasses!

Starting a new map

1 > Start CC2, either by clicking its icon on the Windows@ desktop, or by selecting **Windows@ Start Menu >> Programs >> Campaign Cartographer 2.**
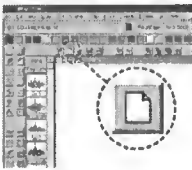
2 < Click on the **New** icon.

You see a new blank map, ready for you to draw on.

The new map is based on the current template. If the last map you created was a dungeon or city, the current template might have be set for a city or dungeon.

To select an overland current template, click **Template** icon 🖼 and select an overland template from CC2's **Templates\Maps** folder.

The tutorial is based on the **1000 x 800 (Sea background).fct** template.

Starting commands

To start a new command, you can:

☑   Click the command's icon.

✓   Select it from the menu,

✓   For some commands use hotkeys (e.g. [Ctrl][C] for Clipboard Copy).

☑   Type the command at the Command Line.

You know a command has been accepted because the Command Line (at the bottom of the screen) will change to tell you what information CC2 needs next.

Starting a command will usually cancel any other command that was in progress. Some commands (e.g. the zoom commands) are designed to work inside another command and do not cancel the previous command.

Drawing a circle
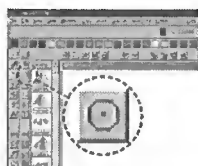
1 < Click on the Circle icon.
  The Command Line at the bottom of the screen reads Center [0|000, 0|000]: and the cursor changes to crosshairs. CC2 is waiting for you to place the center of the circle.

Center[0.00000,0 00000]

2 > Click any point in the drawing window.
  The Command Line reads Point on circle: and the cursor becomes a stretching circle, centered at the first point you clicked.

[DynTrack] Point on circle.

3 > Click another point in the drawing window.
  The circle is drawn. It is solid and black because solid is the current fill style and black is the current color.

> The circle is an entity, and two of its properties are its fill style and color. When entities are created, they get their properties from the current drawing settings.

Ending commands

To cancel a command in mid-process you can:

✓ Press the Esc key. The Command Line will instantly revert to Command:.

✓ Select another drawing or editing command (not a zoom or modifier as these are designed to work inside other commands).

Changing the current drawing settings

The current drawing settings are shown in the Status Bar at the top of the screen.

T: 630.00000,760.00000   ■ P 0.000 mm W: 0.00000 L: COAST/SEA   LS Solid   FS. Solid

The current settings are, from left-to-right:

✓ The drawing cursor position   T: 630.00000, 760.00000
✓ The current color   Black
✓ The current pen thickness   P: 0.000 mm
✓ The current line width   w: 0.00000
✓ The current layer   L: COAST/SEA
✓ The current line style   LS: Solid
✓ The current fill style   FS: Solid

You can change any setting at any time by clicking on it – even in the middle of another command.

1 > Click on the current color setting (black box) in the Status Bar.
   You see the Select Color dialog box:
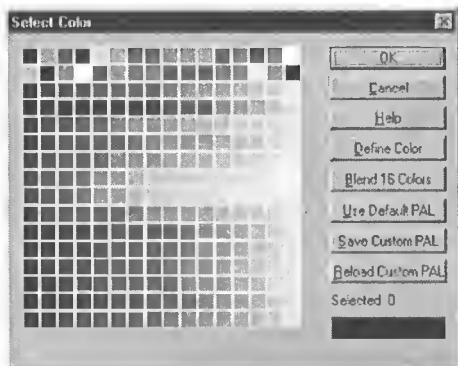
2 > Click on the bright red box in the top row of colors.
   The color preview box in the bottom right of the dialog box changes to red and the text above it reads **Selected: 2.** (You can refer to colors using their color number.)

3 > Click the **OK** button.
   The color box in the Status Bar is now the red you chose.

4 > Click the current fill style setting **FS: Solid** in the Status Bar.
   You see the Fill Styles Properties dialog box:
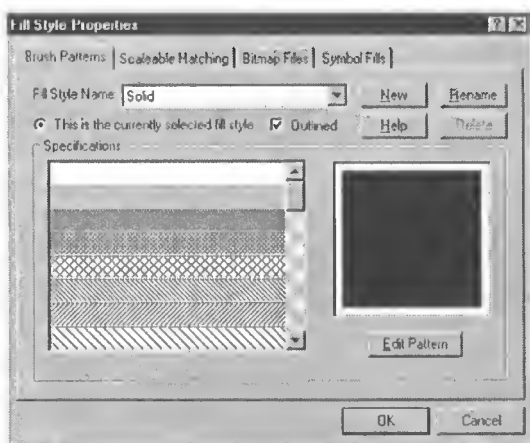
The currently selected fill style is **Solid,** shown in the **Fill Style Name** box, and by the grey highlight in the scrolling list.

5 > Click the hollow box at the top of the scrolling list.
The currently selected **Fill Style Name** changes to **Hollow.**

6 > Click the **OK** button.
The fill style indicator in the Status Bar changes to **FS: Hollow.**

Drawing a box
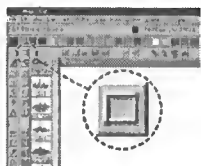
1 < Click on the *BOx* icon.
The Command Line reads 1st corner .

2 < Click anywhere in the map to place the first box corner.
The Command Line reads *Opposite corner:* and the cursor changes to a stretching rectangle, anchored at the first corner.

3 > Click to place the opposite corner.
The box is drawn and the command ends. The box is hollow and red, as per the current drawing settings.

Changing properties of existing entities

So we've seen that entities are drawn using the current drawing settings, and that you can change the current settings by clicking on them in the Status Bar. CC2 also lets you change the properties of entities after they have been drawn (remember, this is one of the advantages of CC2 over paint-type programs).
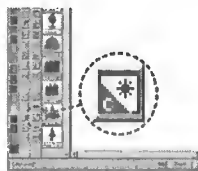
1 < Click on the **Edit Entity Properites** icon.
The Command Line reads *Entity to edit :* and the cursor changes to a pick box. CC2 is waiting for you to pick an entity to edit.

2 v Click on the edge of the red box you drew.

☑ To select an entity, you left click on one of its edges or, if it is text, on its baseline.

☒ Clicking inside the entity will not select it.

Provided you clicked on the edge of the box, you will see the Entity
Properties dialog box.
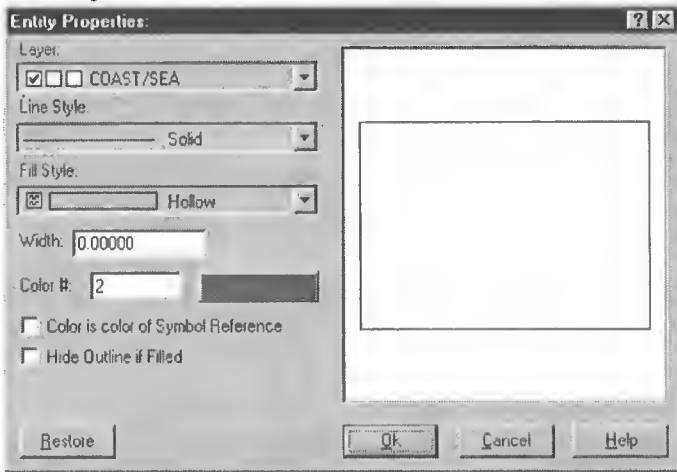
It tells us that our box is:

on Layer	**COAST/SEA**
Line Style	**Solid**
Fill Style	**Hollow**
Width (line)	0.00000
Color	**2 = Red**

3 > Click the red button next to **Color #.**
    You see CC2's full color palette from which you can choose a new
    color for the box.

4 > Click on any other color then the **OK** button.
    The box in the preview area is shown in the new color,

5 > Click on the **Fill Style** drop-down list.

6 < Scroll most of the way down the list and click
    on the **Leaves** fill style.
    The box fill style is changed to **Leaves.** This
    fill style is a bitmap image.
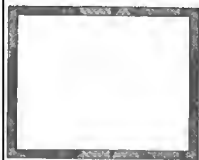
7 **<** Change the **Width** value from 0 to 15 then press the ⌨ Tab key

Width refers to the width of the box outline. If you set the width to a non-zero value, as we have done here, CC2 applies the current fill style to the line, rather than the whole box.

8 > Click the **OK** button.

The box is updated with the its new properties,

Selecting more than one entity at a time

The Edit Entity Properties command affects one entity at a time. When we used it, the Command Line asked *us Entity to edit* : then, as soon as we picked an entity, CC2 gave us the dialog box.

CC2 also has tools that change the properties of many entities at the same time. The icons for these change commands are on the left of the screen and all have a red slash across one corner. To affect many items at once, we need to know how to select more than one entity at a time.
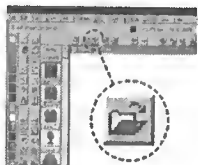
1 **<** Click **Open.**

CC2 asks if you would like to save the changes to your map. It's not exactly a masterpiece, so click **No.**

You see the Load Drawing dialog box.

2 > Load **Properties Example** from CC2's **Tutorials** folder.

The example map loads. It has various entities to let us try out CC2's change properties tools.
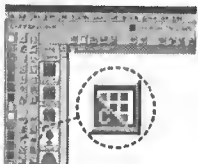
3 **<** Click the **Change Color** icon.

The Command Line reads *Select entities (0 picked)* : and the cursor changes to a pick *box.*

4 > Click on the edge of the green box.

The box is highlighted in gray. The Command Line reads *Select entities (1 picked)* :. CC2 is waiting for *you* to add to the selection.

5 > Click at the top right of the drawing, not on an entity.
You didn't click on an entity, so CC2 assumes you want a
selection window. The Command Line reads `Opposite corner : .`

As you move the mouse around, you see a stretching selection
window, anchored at the first point.

6 > Click to place the opposite corner so that the selection box includes
the circle and clips the top of the wiggly line.
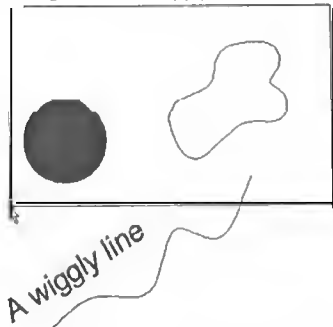
CC2 adds the circle, smooth shape and wiggly line to the selection.
TheCommandLinereads `Select entities (4 picked):.CC2` is
waiting for you to add more to the selection.

7 > Press the 🔲 key at the same time as clicking on the edge of the
circle.
The circle is deselected. Pressing 🔲 while making a selection
(including a selection window) removes the entities from the
current   selection.

TheCommandLinereads `Select  entities  (3  picked)  :.`
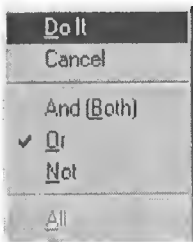
8 < Right click.
You see the Selection popup menu.

9 < Click on Do It.
This tells CC2 that you have completed your
selection and want to do the change.

The Command Line reads `New entity color
[dialog]:.`

Command Line, brackets &the right-button

I'm sure you've noticed how often I mention the Command Line and
what it's saying. I give you this detail not because I'm a maniac, but
because watching the Command Line is essential to mastering CC2.

> The Command Line gives you feedback during commands and tells you what CC2 is waiting for.   ,

When the Command Line contains a value or word in brackets, e.g. *Scale by* *factor* *12* I : , that value is the default. Right click (or press ⌜Enter⌟) to accept the default.

So, in the case *of* *New entity* *color* *[dialog]* :, if you right click you will get the Select Color dialog box.

---

continued from previous instructions..

10 > Right click.
   The default value was *[dialog]*, so you see the Select Color dialog *box*.

11 > Click the bright green box in the top row, then **OK.**
   The selected entities change to bright green.

Maybe another time,. .

Often you will want to perform many changes on the same set of entities. Selecting with **Prior,** is a very quick and easy way of doing this.

Let's say that having changed their color, you now want to change the line width of the circle, smooth shape and wiggly line.
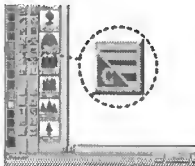
*Continued from previous instructions.. .*

12 < Click the **Change Line Width** icon.
   The Command Line reads *Select* *entities* *(0* *picked)* : and the cursor changes to a pick *box.*
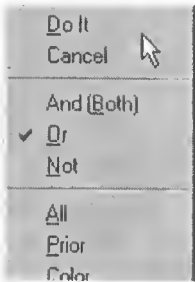
13 <, Right click.
   You see the Selection popup menu.

14 < Click on **Prior.**
   The Command Line reads *Select* *entites* *(3* *picked)* : . CC2 has reselected the previous selection.

15 < Right click then click Do It.
   The Command Line reads *New* *Line* *Width* *[0.00000]*.

16> Type in 15 then press [Enter].

If you had right clicked again, CC2 would have used the default value of 0.0000. Instead, you told CC2 that you want the new width to be 15. The entities change to the new line width.

It'll be the undoing of you

If something unexpected happens while you're using CC2, don't panic, just click **Undo.** In fact, why not try it now?
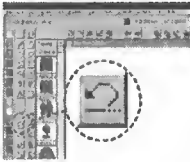
continued from previous instructions...

17 4 Click on the **Undo** icon.

The last command is undone. The box, smooth shape and wiggly line revert to zero line width.

The undo in CC2 will go back up to 10 commands or to the last save (whichever is most recent).

Keyed up for speed

The Selection popup menu is quick and easy to use but if you are happy using your keyboard, you can work even faster!

Each entry in the popup menu has an underlined letter (for example Q in DO It). This is the keystroke you can use instead of the popup menu.

Keystrokes let you repeat the last example in a thimbleful of seconds.

continued from previous instructions.. .

18 > Click the **Change Line Width** icon [icon].

The Command Line reads Select entities (0 picked) :.

19 > Press [P] for **Prior.**

CC2 reselects the circle, smooth shape and wiggly line. The Command Line reads Select entities (3 picked) :.

20> Press [D] for DO It.

The Command Line reads New Line Width [15.00000].   The default value is the last line width we used. Clever huh?

21> Right click or press [Enter] to accept the default.

The change is made. The entities now have a line width of 15.

Click icon, [P], [D]. CC2's as quick as that!

A summary of Getting Started...

You will be using these concepts and techniques all the time. If any of this seems strange, go back and re-read this chapter!

✔ A map is made up of entities. Every item in a map is an entity.

✔ Entities have properties such as color, fill style, line width and line style which control how they appear.

✔ Filled shapes are closed shapes with a solid fill style. You can fill or unfill a shape by changing its fill style.

✔ New entities get their properties from the current drawing-settings.

✔ You can change a current drawing setting by clicking its indicator on the Status Bar.

✔ You can change properties of single entities using the **Edit Entity Properties** icon (the icon with the green corner),

✔ You can change the properties of a selection of entities using any of the **Change Properties** icons (the icons with the red corner).

✔ Watch the Command Line; it tells you what CC2 is waiting for. Mastering the Command Line is essential to mastering CC2.

✔ If the Command Line has a value in brackets, that is what CC2 will do if you right click or press Enter.

✔ Whenever CC2 asks you to Select entities then:

　0　clicking on an entity's edge adds it to the selection,

　0　clicking **not on** an entity starts selecting by a window,

　0　pressing Ctrl while selecting removes entities from the current selection,

　0　right clicking brings up the Selection popup menu,

　•　you can use keystrokes in place of the Selection popup menu,

　0　selecting DO It completes tells CC2 the selection is complete, do the edit.

MAPPING LAND

Using drawing templates

When you click the **New** icon, CC2 creates a new map based on the current template. The template gives the new map pre-defined properties such as fill styles, line styles and layers plus pre-drawn features such as a sized border and a colored background.

The last template you selected remains current until you select another template.

Setting the current template
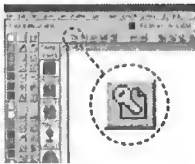
l   < Click on the **Template** icon.
   You see the Select New Drawing Template dialog box.

2 < Select 1000 **x 800 (Sea Background).FCT**
   from CC2's **Templates\Maps** folder then click
   the **Open** button.
   Until you select another template, all new
   maps will be based on this template.

3 > Click on the **New** icon.
   You see a new map. It has a ready-drawn border and a sea blue
   background. Less obviously it has also inherited the template's
   layers, line styles, fill styles, units, grids and current drawing
   settings. In short, the template has saved you loads of time by
   correctly presetting all the drawing options.

Drawing closer to land

This illustration shows three landmasses. One, the island, fits entirely within the map border. The other two, extend beyond the map border. We'll start off by drawing the island.

---

4 < Click on the **Landmass** icon.

The cursor becomes crosshairs, ready for drawing land, and the Command Line reads `1st point:`.

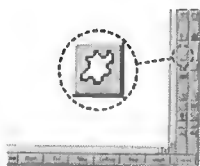When you clicked **Landmass**, CC2 changed the current drawing settings ready for drawing land. The color is pale green, the fill style is solid and the layer is **COAST/SEA**.

After changing the drawing settings, the final act of **Landmass** is to start drawing with a polygon. In CC2, land is simply a very irregular polygon!

If you want land another color, click the color box and select the new color now.

If you want to use another command to draw your land, such as **Circle** for *Circle Island*, click the icon of the other shape now.

5 > Click points to create an island similar to the illustration. When the coastline is almost complete, right click to close the polygon and finish the command.

The island is drawn in the pale green color. If you don't like your first attempt, you can always use the **Undo** icon and try again.

Creating a good coastline is a question of good mouse control. Try to move the mouse slowly, and click quite frequently.

Land that extends beyond the map border

A landmass that extends beyond the map border is exactly the same as the island, except we make sure that two edges of the polygon are precisely on the border. To do this we'll need to use some of CC2's precision drawing ability.

Modified for precision

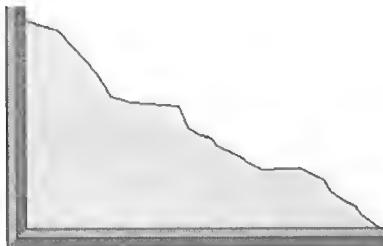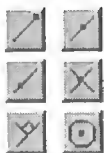Clustered on the right of the drawing window are CC2's modifier icons **– Endpoint, Midpoint, On, Intersection, Perpendicular** and **Center.** There is also a **Modifiers** menu, containing many more options.

Modifiers all work the same way:

Whenever CC2 asks you for a point, you can click a modifier icon, then pick the entity on which you want the modifier to work.

For example, when CC2 asks for a *1st Point* , you can click the On icon, then pick the entity on which you want the point. CC2 will place the point precisely on the entity. You can not achieve the same accuracy by eye.

1 > Click the **Landmass** icon .
   The cursor changes to crosshairs, ready to start drawing the land.

2 < Click on the **On** modifier icon.
   The Command Line reads *Entity : . CC2* is waiting for you to pick the entity on which you want the point placed.

3rd point ✖

2nd point   **1st point**

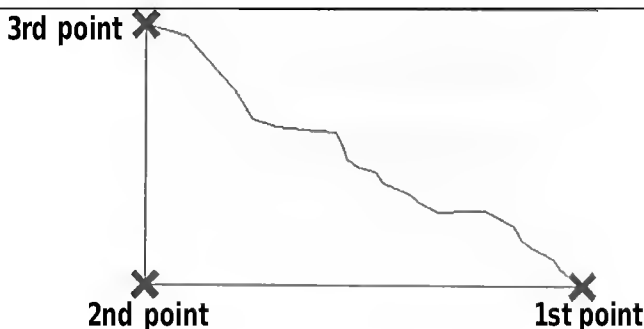3 > Select the south map border at the point the where land will meet the border (marked 1st point).

The point is anchored precisely on the map border. The Command Linereads **Next point:**.

4 > Click the **Endpoint** modifier icon (the one above **On)**.
The Command Line reads **Entity :**. CC2 is waiting for you to select the entity whose endpoint you want to use,

5 > Click on the south map border near the southwest corner.
The point is attached precisely to the endpoint of the border, right in the corner of the map. The Command Line reads **Next point :**.

> **Endpoint** attaches the point to the nearest endpoint of the entity you select.
>
> With all modifiers, if you click a point that is not over an entity, CC2 cancels the modifier and the Command Line returns to Next point:. To restart the modifier, you must click its icon again.

6 > Click the **On** modifier icon .
Again, the Command Line reads **Entity :**.

7 > Click the west map border at the point where the land will meet the border.

8 > Click points to create a coastline from border to border. When you are almost back to the first point, right click to complete the shape.
The landmass is drawn in the corner of the map.

Land that extends beyond two or more corners

This is exactly the same as the previous example except you have to select more corner points as shown below.
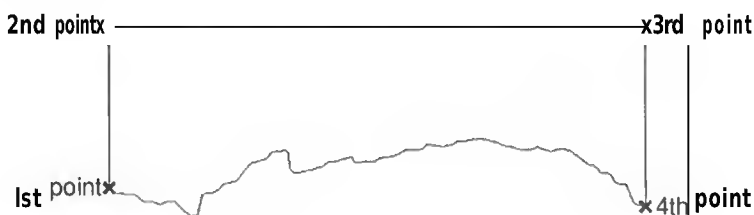
The Modifiers menu

As well as the six modifier icons, CC2 has more modifiers listed under the **Modifiers** menu. While their names tell you what point they select, CC2's Help system gives detail on how to use each.

Next to each main modifier is its shortcut key. For example, pressing ⬜ is the same as clicking the **Endpoint** icon.

Whenever CC2 asks you to pick a point, you can use a modifier to place the point precisely relative to another entity.

Coastal outlines

The finishing touch to your coastlines is a black outline.
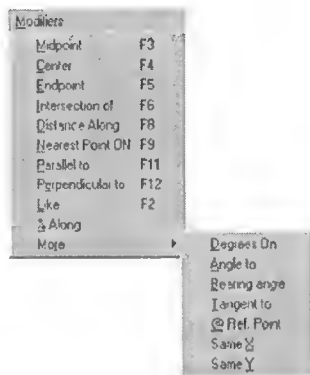

1 < Click on the **Outline in Black** icon.
The Command Line reads `Select entities (0 picked) :`.

2 > Click inside the landmass at the bottom left (not on an entity).
Because you didn't click on an entity, CC2 assumes you want a selection window. As you move the mouse, the window shrinks and grows.

3 > Click to place the window so it clips all the landmasses.
The landmasses are highlighted in gray.

4 > Right click to see the Selection popup menu, then click **Do** It.
The landmasses are outlined in black,

> If you want another color for the outline, pick the color then select'
> **Draw Menu > > Outlines '>>** In **Current Color.**

Zooming in to add detail

At this stage, you should have a map looking something similar to mine below. If you don't, click the **Open** icon and load **Tutorial** I.FCW from **CC2's Tutorials** folder.

1 > Click the **Zoom Window** icon.
The cursor changes to crosshairs and the Command Line reads `Window:`. CC2 is waiting for you to click the first corner of the window to which you would like to zoom.
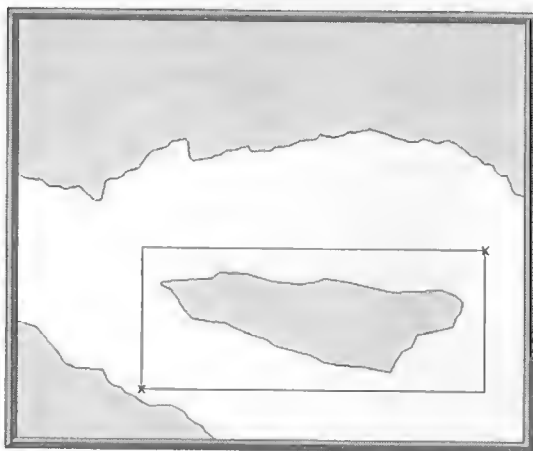
2 > Click opposite corners of a window around the island.
The map view changes so the window you selected is displayed as close-up as possible.

Frx it up now

Now that we have a magnified view of the island, we can see that the coastline is not quite so detailed as we first thought. In fact, it's positively straight-lined. This gives us two options:

⋈   We can redraw the island, zooming in to add fine detail.

✓   We can **Frx** it up.

Frx is CC2 lingo for fractalizing a shape. Frx adds random detail to paths, or polygons.
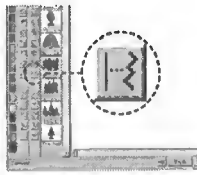
I < Click on the **Frx** icon.

You see the Fractalization dialog box.

2 < Set the **Strength** to 30 and the **Depth** to 3.

3 > Click the **OK** button.

The dialog box closes and the Command Line reads *Select Polyline* . CC2 is waiting for you to pick the landmass to fractalize.

4 > Click on the edge of the island.

The green land is fractalized. CC2 has added more detail added to the coastline.

Around the coastline, you can see the white clutter left over from the old coastline. This is an example of when to **use Redraw.**

5 > Click the **Redraw** icon .

The screen updates. You can now see the black coast outline again, but it is of the old coastline.

6 > Click the **Frx** icon, then click **OK** to the dialog box, then select the black coastline.

The coastline is fractalized too. Its new shape precisely matches the landmass because using **Frx** with the same settings on the same shape always has the same result.
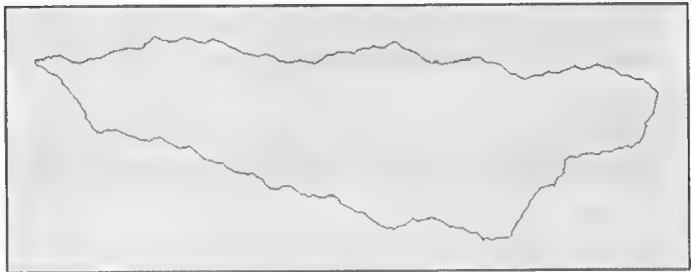
The Fractalization dialog box

The Fractalization dialog box starts with the last values you used.

You can change the values in the dialog box either individually, or by selecting from the **Saved Settings** list. If you find a set of values that you particularly like, you can use **Save** to add them to the list of settings.

Frx works by creating a new point between every existing point along the coastline. Each new point is displaced, creating a bend in the coastline. The size of the displacement is governed by **Strength,** Values for **Strength** can be between 0 and 100.
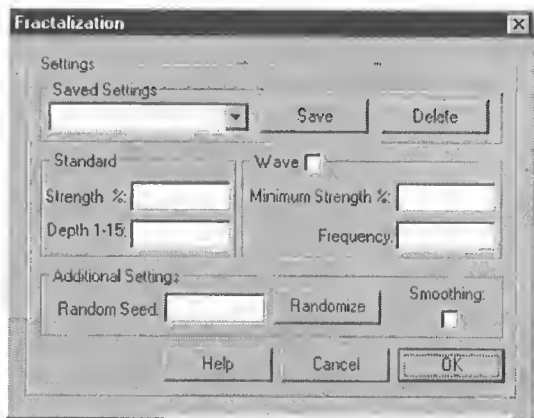
Depth sets how many times **Frx** repeats the above process. Each time a new set of points is added, the number of points (and detail) along the coastline doubles. This means that a value of 3 gives and eightfold increase in the number of points, while a value of 4 gives a sixteenfold increase! Normal values for **Depth** are between 2 and 5.

If the **Wave** box is ticked, **Frx** gradually varies the value of **Strength** along the length of the coastline. The amount of variation is controlled by the **Minimum Strength** setting, and how quickly it varies is set by **Frequency.**

If the **Smoothing** box is checked, **Frx** creates a smoothed coastline. Smoothed coastlines require less points, but are not as realistic.

A summary of Mapping Land...

Ha! At last we've made real mapping progress. These are the new ideas you met in this chapter. If you are in any doubt, re-read the chapter!

✔ New maps are based on the current template. The template gives the map predefined features and properties.

✔ Templates are named with their size and any special features they have. Before starting a map, use the **Template** icon to select an appropriately sized template.

✔ The last selected template remains current until you select another template.

✔ The **Landmass** icon changes the current settings ready for drawing land and starts drawing a polygon.

✔ Normal landmasses are solid-filled polygons – very irregular polygons, but polygons nonetheless.

✔ To complete a landmass, add a coastline with **Outline in Black or Draw Menu >> Outlines >> In current color.**

✔ Modifiers such as **Endpoint, Midpoint, On, Intersection, Perpendicular** and **Center** let you place points precisely in relation to existing entities.

✔ Land that extends beyond the map is the same as an island, except you give it straight sides that precisely match the map border. To get the required precision, use modifiers.

✔ The zoom icons let you get a closer or more distant view of the area you are working on.

✔ The **Frx** (Fractalize) icon adds fractal detail to paths and polygons.

✔ Using **Frx** on the same shape with the same settings always has the same result.

MOUNTAINS

While every fantasy world can have its own rules, most people tend to stick with the ideas that rivers run from mountains to the sea, that habitations grow near rivers, and that trees don't grow well on mountaintops. For these reasons, our next step in world-building is mountaineering. Well, you know what I mean!

To use my map, open **Tutorial 2.fcw** from CC2's **Tutorials** folder.

Made with symbols
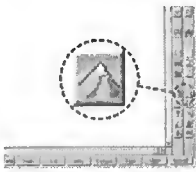
1 < Click on the **Mountain** icon.
CC2 changes the current settings ready for drawing   mountains.

The Catalog Window to the left of the drawing window fills with mountain symbols.

CC2's selection of mountain symbols has been carefully designed to let you create mountain ranges at all angles without obvious repetition.

2 < Zoom Window to get a closer view of the island at the center of the map.

3 < Click the 3rd mountain in the Catalog Window.
The mountain symbol attaches to the cursor and moves around the screen as you move the mouse.

4 < Click to place the symbol in the north of the island, near the coast.
The symbol is added to the map. The same symbol is still attached to the cursor, ready to be placed again.

5 v Place the next symbol to the right and slightly below the first.

For a good 3D effect, place mountain symbols from north to south so that the more southerly mountains are drawn over the bases of the ones behind.
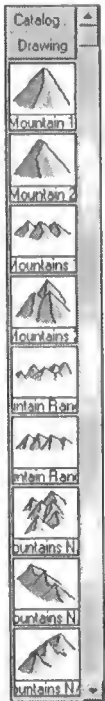
CC2's map symbols are designed to be the correct scale on a 1000 by 800 map. If you are drawing a significantly larger or smaller template, the symbols will appear very large or small. Each drawing template has a recommended symbol scale. **Zoom Extents. You** can see a text box with."Symbol scale:" in it. Zoom **Window** to this text box then record the symbol scale. When you have ,selected your first:'..., symbol, press the right button and type the value in to the X and Y scale boxes on the dialog box.

6 > Click the 5th mountain in the Catalog Window ⟍⟋⟍.

The old symbol is dropped from the cursor, replaced by the new one.

7 v Place the new symbol in front and to the left of the others.
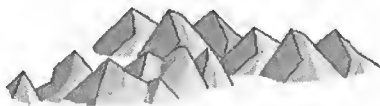
8 v Select the 6th mountain symbol ⟍⟋⟍ from the Catalog Window and place it next to the last, so no gap shows behind.
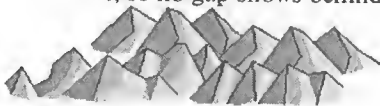
9 v By choosing and placing symbols, build an interesting range of mountains. If you make a mistake with a symbol, correct it using the **Undo.** icon ⟲ (hotkey ⟦Ctrl⟧⟦Z⟧).
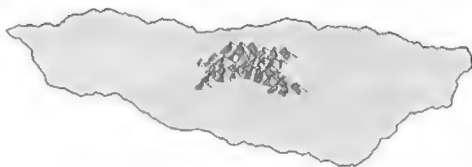
10 > At the edge of the range, add hills and foothills from the same catalog.

Foothills and hills look best as scattered clusters. They do not need to completely link up with the mountains.

Tips on mountain ranges

✓   Place mountains and forests from north to south so that the
      southerly ones cover the base of those behind.

✓   This style of map gives the cartographer's impression, not the
      actual position of each peak. Don't try to add every peak.

✓l   It is very easy to get carried away and add too many mountains, so
      think Zen and restrain yourself. If you browse the example maps
      that come with CC2, you'll see that the most beautiful use symbols
      sparingly. This also reduces the time taken for the map to redraw.

Changing the order that symbols are drawn

It should be added to Murphy's Law that, no matter how carefully you
plan your mountain ranges, the last peak always needs to go right in the
middle!

A CC2 map is a database of entities. When the screen updates, the
entities are drawn in the order they are encountered in the database,
overprinting previous entities. Normally this is the order the entities
were added.

To change the order that entities are drawn, CC2 has four icons –
Bring to Front, Send to Back, Bring in front of and **Send Behind**.

To continue from my example, load **Tutorial 3.FCW** from CC2's
Tutorial folder.

I v Click the great big Great Peak symbol 🏔 and place it in the
      middle of the mountain range.
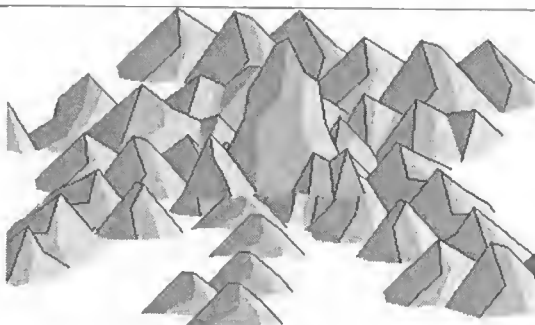
The peak mucks-up the mountain range because it doesn't fit in with the 3D look. It needs to be behind the southerly mountains.
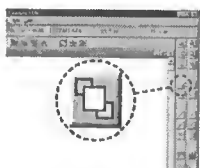
2 < Click on the **Bring to Front** icon.
The Command Line reads *Select entities (0 picked):*.

3 > Click on each of the mountains south of the Great Peak.
As you click on each symbol, it is added to the selection. If you select a mountain accidentally, deselect it by pressing [Ctrl] while clicking on the same mountain again.
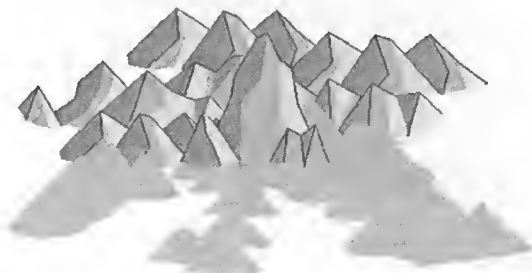
4 > Right click then select **Do** It from the Selection popup menu.
The mountains are reordered.

Mountains with a background

As an artistic touch, it looks very effective to set mountains off with a colored   background.
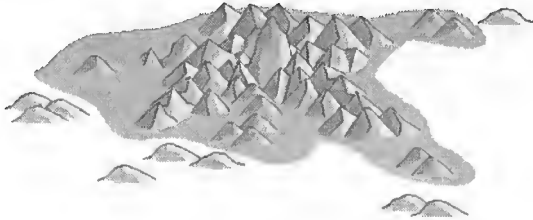
1 > Click the **Color** indicator on the Status Bar and change the current color to #44 (light brown).
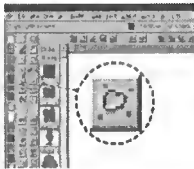
2 < Click on the **Smooth Poly**   icon.
The Command Line reads `1st point` : and the cursor changes to crosshairs.

In keeping with the 3D effect of the mountains, the background looks best if it's slightly clipped by the mountain tops, but is well clear of the bases.

3 v Click points to create a region enclosing the mountains. When the region is almost complete, right click to close the shape and complete   the   command.
The smooth polygon is drawn in the current color and fill style. It was created after the mountains, so it is currently in front of them.

Bring in front of and Send Behind

We need to move the brown background behind the mountains. To do this we will use **Bring in front of** to bring them in front of a reference entity of our choice.

Bring to Front and Send to Back move entities to the very front or the very back of the drawing. If we were to use Send to Back on the mountain background, it would go behind everything, including the green of the island and the sea blue background.

Bring in front of and Send Behind are much more subtle. By picking a reference entity, you say exactly how deep in the drawing the entities will be placed.
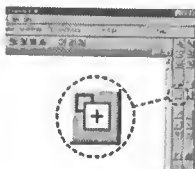
Continued from previous instructions...

4 < Click on the **Bring in front of** icon.
The Command Line reads *Move above entity:* and the cursor changes to a pick box.

CC2 is waiting for you to pick the reference entity in front of which the mountain background will be moved.

5 > Click on the edge of the island.
The Command Line reads *Select entities (0 picked):.*

6 > Click on the edge of the brown mountain background then **DO** It.
The smooth polygon is now behind the mountains.

Cropping mountains to the map border

We already have land that extends beyond the map border, so it's just as likely that we'll have mountain ranges that do the same. *Fronting* the map border gives us a very easy way to neatly crop symbols to the edge of the map.

To use my map, open **Tutorial 4.fcw** from CC2's **Tutorials** folder.

1 > **Zoom Window** on the land in the southwest corner.

2 > Pick and place symbols to draw a mountain range as shown.
Place the leftmost symbols so they overlap the border, without coming out the other side.
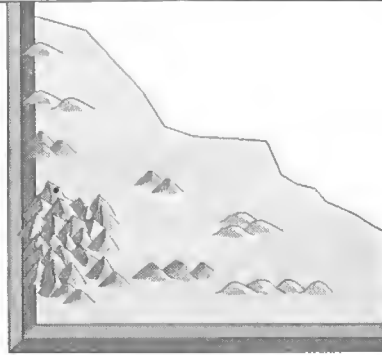
3 > Click the **Front** icon 🔲.

The Command Line reads   *Select entities (0 picked)* :.

4 > Select the map border, then right click and select *DO* It.

The map border is brought to the front of the drawing, hiding any bits of mountain outside the viewable map area.

Colored backgrounds for cropped mountains

The background for these mountains has to combine the straight edges of the border and curves of the mountain range. To create this more complex type of filled polygon, CC2 gives us the multipoly.

Using **Multipoly,** you can take any selection of entities that form a closed shape (one with no gaps) and combine them into a single polygon.

| > Click the color indicator and set it to light brown (#44).

2 < Click on the **Smooth Path** icon.

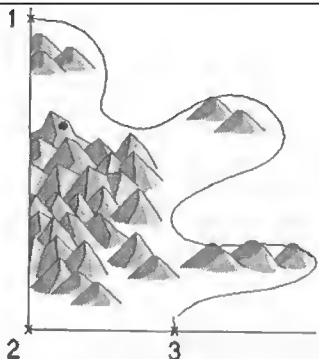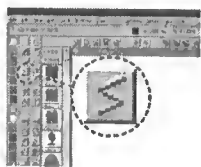The Command Line reads *1st point* : and the cursor changes to crosshairs.

For this path it is critical that the endpoints are precisely on the map border.

3 < Use the **On** modifier icon to select a first point precisely on the west map border.

4 < Click points to create a smooth path that skirts the mountains. Use **On** again to place the last point precisely on the south map border, then right click to end the command.

5 < Click on the **Path** icon.
The Command Line reads `1st point` : and the cursor changes to crosshairs.

6 > Draw a path that completes the mountain background (from point 1 to 2 to 3 as shown on the illustration above).

Use the **Endpoint** modifier to place the points. If drawn correctly, the path should precisely overlie the map border.

> We have placed all the endpoints using modifiers so the shape made by the straight and smooth path not only looks closed, but is also mathematically closed – no matter how close-up the zoom,
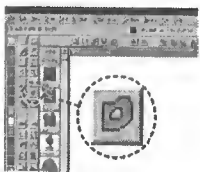
7 < Click on the **Multipoly** icon.
The Command Line reads `Select entities (0 picked)` : and the cursor changes to a pick `bOX`.

8 > Press ⬜ (the keystroke shortcut for **Prior**).
The Command Line reads `Select entities (1 picked)` and the path you just drew is selected and hightlighted in gray.

> If you had tried to select the path by clicking on it, the same click would also have selected the map border. While there are plenty of ways to remove entities from a selection (for example by pressing `Ctrl` while clicking), none are so easy as a single `P` keystroke!

9 > Now click on the smooth path to add it to the selection.
The Command Line should read `Select entities (2 picked)` :.

10 9 Right click then select **DO** It from the Selection popup menu.
The multipoly is created using the current drawing settings (not the
settings of either component entity). The current settings are color
44, fill style **SOLID** and layer **MINERALS/MOUNTAINS.**

As before, we need to put the brown background behind the mountain
symbols.
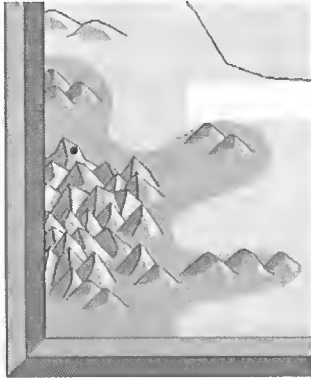
11 < Click **Bring in front** of ⊞.
The Command Line reads Move
above entity: andthecursor
changes to a pick box.

12 < Click on the coast to select it as the
reference entity.
The Command Line reads *Select*
entities (0 picked):.

13 < Select the multipoly then DO It.

14 < The multipoly is moved just in front
of the coast. . . which is behind the
mountains.

Leaking   Multipolies – Ooh, sounds painful!

No matter what you say, I can tell you that it is not possible to place
points precisely by eye. If you try then, when you zoom closer, you'll
discover that what looked touching in reality is a gap! See.. .

1 4 **Zoom Window** on a blank part of the map -
it doesn't matter where.

2 < Use **Smooth Path** to draw half of a shape
to multipoly.

3 < Use **Path** to complete the shape. Place the
endpoints of the path as accurately as you can by
eye.
If you've drawn it well, the shape looks closed.

4 > **Zoom Window** on one of the joins.
You discover that the your precise join in fact has a gaping gap.

If you were to multipoly this shape then it might look fine at first, but at close levels of zoom, the polygon would break down:

Multipolies rely on the shape being accurately closed - not by eye, but by CC2's level of precision. If not, there will be gaps and these will cause errors. When you are creating Multipolies, it is essential that you use CC2's precision drawing aids, such as modifiers.

Multipolies can also leak if any of their edges have more than one entity in them. You can find the offending edge by choosing an editing command, then clicking on each edge. Keep an eye on the number of entities selected – if it goes up by two at once; you've found the offender.

A summary of Mountains..,

Having read this chapter, you should be able to make molehills out of mountains. If not, go back and dig through it again!

✓   Mountain ranges are drawn from north to south, giving a 3D effect as the peaks of the southerly mountains hide the bases of those behind.

✓   Do not use too many symbols. Mountains in this style are not supposed to be to scale, nor to illustrate every peak.

✓   Entities are drawn on screen in the order they are stored in the map. By default, this is in the same order that the entities were created. You can manually change the order that entities are drawn using **Bring to Front, Send to Back, Bring in front of** and **Send behind.**

✓   Bringing the map border to the front of the drawing will neatly crop entities at the edge of the map.

✓   Multipolies are a special type of polygon, created by combining shapes such as lines, arcs, paths and smooth paths.

✓   Multipolies must be precisely closed, with no gaps or overlaps, or they will appear wrong at close-up levels of zoom.

✓   If a multipoly appears incorrectly filled, it is because there is a gap somewhere in the perimeter.

RIVERS, SETTLEMENTS AND ROADS

High ground forces air to rise and cool, coaxing it into sharing the life-giving moisture it carries. Combine this with prevailing winds, proximity to water, temperature and other climatic considerations and you can easily devise plausible rainfall and river patterns.

And once on the ground, water's downwards journey remains shaped by terrain. Where land falls steeply, water falls straight and frantic. Where land falls gently, water follows as sedately as Old Father Thames. And if rock blocks its progress, a river will stop or turn – for now at least.

Life is opportunist. Settlements will form anywhere a buck can be made, but most frequently at sites of opportunity and safety. A habitable region which is rich in resources (be they mineral, marine, or agricultural) will be keenly prized and, perhaps, fought over. Prosperity is usually the result of a natural advantage, such as a rare local commodity, a position on a trading route or an easily defended location.

But let me cease my pseudo-socio-geographic rambling and hasten to my point.. . before drawing rivers, settlements or roads, take a step back and think about the factors that influence them. Your maps will benefit.

A simple, meandering river

We will draw the rivers on the island in the center of the map. I have arbitrarily decided that the west of the island is very dry, while the east benefits from plenty of water flowing off the mountains,

To use my map, open **Tutorial 5.fcw** from CC2's **Tutorials** folder.

1 > **Zoom Window** 🔍 on the central island.
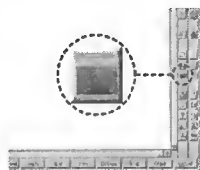
2 < Click the **River** shortcut icon.
CC2 changes the current settings ready for drawing waterways then starts drawing using a smooth path.

The color is now dark blue, the line style RIVER, the layer is WATER/RIVERS and the Command Line reads 1st *point* : .

> The default river drawing tool is Smooth Path. If you want to use a another tool for your river, click another drawing icon now.

3 > Click to place the first point at the eastern edge of the mountains.
The Command Line reads *Next point* : .

4 > Click nodes to create a river that meanders towards the coast.
At first the river should bend frequently. As the river nears the sea, the bends should gradually become larger and more gentle.

> As you add   nodes, you see   a straight-line,   frame and the resultant smooth path. The frame   is for information only and does   not display after the command ends,   .   .

5 > Where the river meets the sea, use the **On** modifier icon ▨ to attach the last node precisely to the coastline. Right click to end the command.
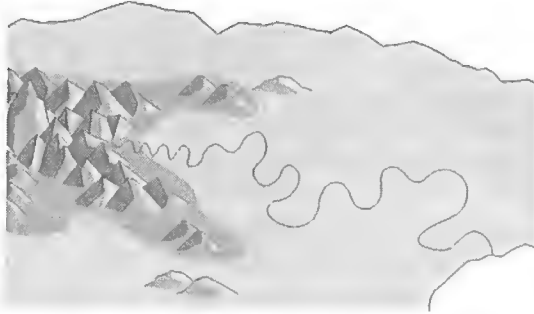
Adding tributary rivers

> In the very first chapter you saw that when the Command Line contains a value or word in brackets, that value or action is the default that CC2 will use if you right click.

1 > Look at the Command Line now. What does it say?
If things are going to plan, the Command Line should read
Command   [MRIVER]:.

(MRIVER is CC2's text-equivalent for the **River** icon.)

2 > Right click.
The Command Line reads *1st point* . Your right click has told CC2 to repeat the **River** command *(MRIVER)*.

> Every command has a text equivalent (which you can type at the Command Line or use in macros). When a command ends successfully, CC2 puts the text equivalent in brackets on the Command Line, ready to execute with a right click. This is CC2's autorepeat facility.

3 > Zoom Window on the top section of the river and add a tributary from the north. Use the On modifier to join the tributary precisely to the river.
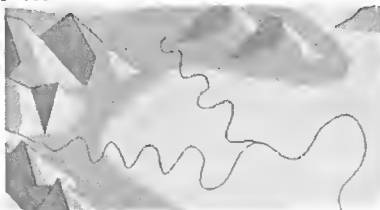

Rivers that get wider

It is common to show large rivers growing as they approach the sea. To do this we will make use of the Line Width setting which, until now, has been sitting unused and unloved on the Status Bar.

The main river is a single entity so, if we were to change its width now, the whole length of the river would be changed. For a gradual increase we need to split the main river into sections, then change the width section-by-section.

To use my map, open **Tutorial 6.fcw** from CC2's **Tutorials** folder.
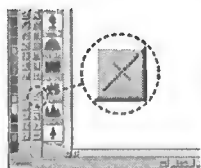
1 < Click the **Split** icon.

The Command Line reads `Entity to split:` and the cursor becomes a pick box.

2 > Click on the main river.

The river is highlighted in gray to show it is selected. The Command Line reads `Split entity at point:` and the cursor becomes crosshairs.

3 > Place the crosshairs approximately halfway down the river, then click to create the split.

The command ends and the Command Line reverts to `Command [SPLIT]:`.

There is no visible difference, but the river is now two separate smooth paths, meeting at the point where you created the split.

4 > Right click.

Split repeats (the last split was successful command, so it is the default command).

5 > Select the lower end of the river.
The half that you selected is highlighted (proof that the other end is now a separate entity) and the Command Line reads *Split entity at point:*.

6 > Split this river section into two approximately equal parts,

7 > Using right click to repeat **Split,** do the same to the top section,
The river is now in four parts, each seamlessly meeting its neighbors.

8 > Click the **Change Line Width** icon .
The Command Line reads *Select entities (0 picked):*.

9 > Select the section of river nearest the sea, then right click and **Do** It.
The Command Line reads *New line width [o. 0000] :*.

10 > Type 1 then press
As you type, the numbers appear on the Command Line. When you press the command completes. The bottom section of the river is now wider.

> Whenever CC2 asks for a value, such as *line* width, you can type the answer. What you type is displayed on the Command Line.
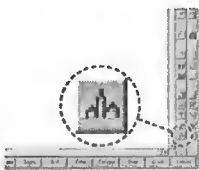
11> Repeat **Change Line Width** on the next two river sections, typing values of 0.666 and 0 .333 respectively (the section at the head of the river does not need changing).
Your river should now look something like this:
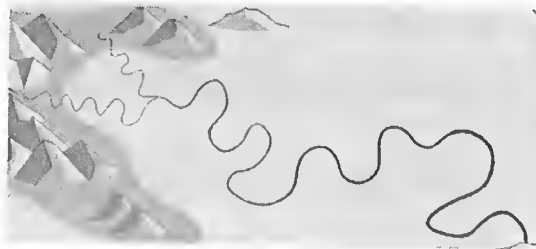
12 > Add more rivers to complete the island's waterways.

Structures

Well, everyone needs somewhere to live.

1 < Click the **Structures** shortcut icon.

CC2 changes the current settings ready for adding buildings.

The Catalog Window fills with CC2's selection of structures symbols.

2 > Click on the **City 2** symbol.

The symbol attaches to the cursor.

3 > Click to place the symbol where the main river meets the sea.

The symbol is placed where you click. The same symbol continues to be available from the cursor.

4 > Scroll down the Catalog Window and click on a village symbol.

The symbol at the cursor changes from the city to the village.

5 > Click to place the village at the base of the mountains.

6 > Selecting from the Catalog Window, place more structures.
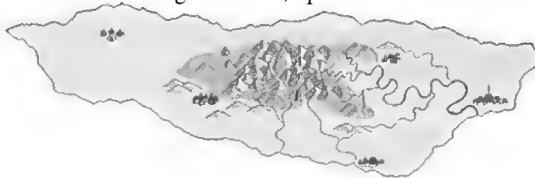
7 > When you want to stop placing symbols, right click then click **Finished** on the Symbol Parameters dialog box.

Roads and tracks

To use my map, open **Tutorial 7.fcw** from CC2's **Tutorials** folder.

1 < Click the **Road** icon.

CC2 changes the current settings for drawing roads, and starts drawing with a path.

The Command Line reads 1st *point* : .

48

2 > Click points to build a road from the main city to its nearest neighbor. Right click to complete the command.
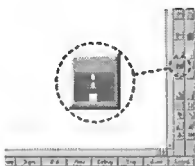
The road is drawn in a brown dashed line. CC2 changed the current color to **brown** and line style to **Road** (dashed) when you clicked the **Road** icon.

It the road crosses a river, there is no need to break the road. We will add bridges afterwards.

> Remember, at any time you   can use the zoom icons to get a better view of the area you are mapping.

3 > Right click to repeat the last command.
The Command Line reads *1st point :* .

4 > Draw any other roads appropriate for your map.
Where two roads join, use modifier icons such as **Endpoint** and **On** to make the junction precise.

Reshaping coastlines, rivers and roads

The basic shapes behind coastlines, rivers and roads are paths, smooth paths, polygons and smooth polygons. When you create these shapes, you click to place the nodes that define them.

You can reshape these shapes after they have been drawn by editing their nodes. The icons for this are at the bottom of the left icon bar.

Delete Node. Click then the node you want to remove.

Insert Node. Click then select a point on a the road, river or coast. A node is created, moving as you move the cursor. Positione the node as you want it, then click to place it.

Node Edit. Click then the node to move. Move the cursor until the node is positioned correctly, the press the left button.

> Smoothed paths have a frame which shows the points you selected. When editing smooth paths, you may find it easier to make the frame visible first using Options Menu >> Drawing Aids >> Toggle Frames.

Bridges

Bridges are optional. It is normally very obvious where they are!

---

1 > Click the **Roads** icon .
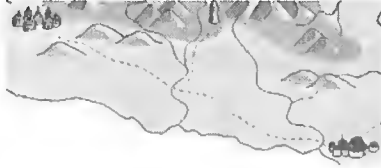
> The current settings are readied for drawing symbols related to roads

2 > Zoom Window to where an **east-west** road crosses a river.

3 > Scroll down the Catalog Window and pick the **Bridge, E/W** .

> The bridge attaches to the cursor, canceling the path command (which was ready to draw a road after you clicked the **Road** icon).

4 > Place the bridge at the river crossing.

5 > Place any other bridges your map requires.

> In addition to the Bridge, E/W, structures symbol catalog also contains Bridge, N/S and broken versions of the same.

Excuse me CC2, how far is it to... ?

When you want information or measurements from your map, look under **CC2's Info** menu. It is a mine of useful information.

---

1 > Select **Info Menu >> Length along.**

> The Command Line reads *Select entity:* and the cursor changes to a pick box.

2 > Click on a road.

> The road is highlighted in gray and the Command Line reads *From point on entity [entire entity]:*.

3 > **Either**   right click to accept the default *[entire entity]*
>   **or**   click two points along the road.

> You see a dialog box containing the real-world distance, in miles, between the two points:

Distance = 133.59361

OK
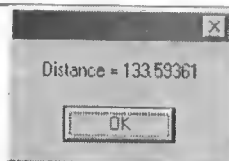
> Keep this feature in mind when you draw roads. Using sensible start and end points makes it very easy to measure distances later on. For distances as the crow flies, use Info **Menu > > Distance** and click two points to measure between.

Non standard coastlines, rivers and roads

The shortcut icons, such as ⬛ and ⬛ change the current drawing settings to standard values (that we decided upon when we wrote CC2).

But what happens if you don't want brown, dotted roads? What happens if you want a different blue for your river? It is not a problem:

1 > Select the shortcut icon for the feature you are drawing,

2 > Change the settings you don't like.

For example, if you want to draw a light blue river select the **River** icon (which sets the line style, color and layer for you) then click the color indicator on the Status Bar to choose a different color.

3 > Draw the feature as normal.

A summary of Rivers, Settlements and Roads...

We're trucking along now! If this doesn't make sense, you know what to do!

✓   Clicking the **Structures** icon changes the current drawing settings and loads CC2's structures symbols into the Catalog Window.

✓   To draw standards roads and rivers click or , then click points along the path.

✓   To draw non-standard roads or rivers, click or then, before you start drawing, change whatever you don't like. You can, for example, click the color indicator to change the current color or select another drawing tool.

✓   Create rivers of increasing width by splitting an existing river into separate sections, then changing the width of each section.

✓   Use , and to reshape existing paths and polygons.

✓   You can use **Info Menu >> Distance along** and **Info Menu >> Distance** to measure real-world distances from your map.

✓   Every command has a text-equivalent which you can type at the Command Line in place of clicking an icon or selecting from a menu.

✓   When a command completes successfully, CC2 inserts its text-equivalent in the Command Line brackets. Right clicking restarts the command.

✓   When CC2 asks for a value, you can type the answer at the Command Line.

FORESTS AND VEGETATION

There are many ways that you can represent forests in CC2. The method you choose will depend on the style of map that you like, and how fast your computer is – some forest styles redraw much faster than others.

Forest outlines

For the purpose of this tutorial, I have used separate chapters for each type of map feature. In reality, the different map features are very interrelated, with roads, rivers and structures affecting the shape of forests, and vice versa.

For normal mapping it is a good idea to:

✓   outline your forests early on,

✓   then, knowing where is treed, add the rivers, roads and structures,

✓   finally add finishing detail to the forests.

An advantage of this sequence is that, after the second stage, you already have a serviceable map.

To use my map, open **Tutorial 8.fcw** from CC2's **Tutorials** folder.

---
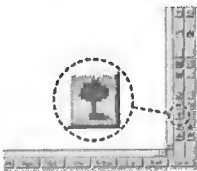
1 < Click the **Vegetation** icon.
    CC2 changes the current settings for drawing vegetation. The Catalog Window fills with CC2's selection of tree symbols.

    The current layer is **VEGETATION**, fill style is **Solid** and color **mid green (#90)**.

2 > Click the **Smooth Poly** icon .
    The Command Line reads 1st point: .

3   v Place nodes to create the boundary of a forested area in the southeast of the island. Right click to complete the polygon and end the command.

4 > Right click to repeat **Smooth Poly** and add any other forests you want on your island.

Now you know where the forests are, you would normally go on to draw the other map features then return to add the finishing touches to the forests.

5 > Use **Front** 🔲 on any rivers and roads hidden by the new forests. If you draw roads and rivers after the forest boundaries, you wouldn't need to do this.

Forest Frills

The outlined forests are already enough to give you a good working map. You can, however, achieve perfection by adding a few frills.

Frills must make allowance for any roads, rivers and other structures that pass through the forest, so they are added as a finishing touch - after other map features.

Forgotten Realms@ style forests

This is the style of forest used we used in TSR's *The Forgotten Realms@ Interactive Atlas.*

These forests look great, are quick to draw and use relatively few entities so they don't make excessive demands of your processor.

To use my map, open **Tutorial 9.fcw** from CC2's **Tutorials** folder.

1 v Click the **Fractalize** icon.

You **see** the Fractalize dialog box:

Forgotten Realms@ is a registered trademark of TSR, Inc.

Forgotten Realms' is a registered trademark of TSR, Inc.
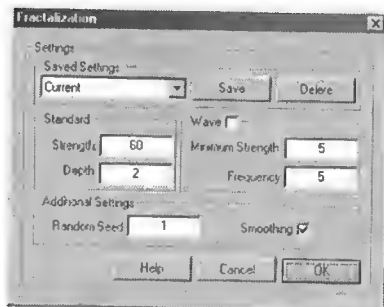
2 > Click to place a tick in the **box** next to **Smoothing.**
   The original forest boundary is smooth, so the fractal needs to be smoothed, too.

3 > Set the **Strength** between 50 and 70 and the **Depth** to 2.
   The line of a smooth polygon doesn't pass through every node but is pulled towards each node, rather like a graph. To create a very wavy smooth path you need a few points boldly placed.

   Setting the **Depth** to 2 gives only 4 times as many nodes (not that many), and a **Strength** between 50 and 70 (quite high) gives bold modification.

4 > Click the **OK** button.
   The Command Line reads *Select polyline : .*

5 > Click on the boundary of the southeastern forest.
   The fractalization is applied, creating a more detailed and wavy outline.

6 v Use to remove any bends you don't like.
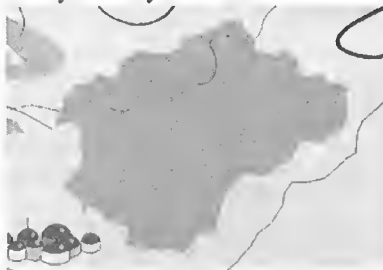
7 > Click the **Outline in Black** icon.
   The Command Line reads *Select entities (0 picked) :.*

8 > Select the forest then right click and *DO* It.
   The forest is outlined. The next step is to add interior detail.

9 > Click the black box on the color bar.
   The black box is now outlined, showing it is the current color.

10 v Use **Smooth Path** ⧄ to draw broken rings inside the forest that approximately mimic the forest boundary.

The inner detail looks best if in bands that are roughly evenly spaced and not too dense. Like mountain symbols, it is tempting to add a lot of detail, but keep in mind how the map will look when zoomed out.

> Remember, after each **Smooth Path** you can right click to repeat the same command.

Symbol Forests

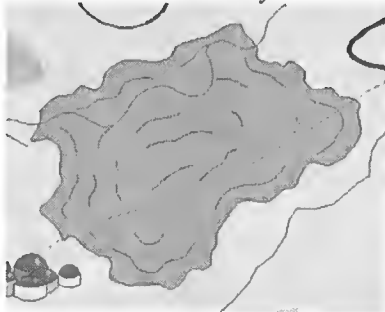These forests are built with blocks of symbols placed from north to south, much like mountains. As before, CC2 makes it easy to add hundreds of symbols, but please resist the urge. Too many symbols not only spoils a map, it also makes it hard work for your PC to process.

1 > Zoom Window 🔍 on the northeastern forest.

2 > Click the **Vegetation** icon 🌳.

The drawing settings for vegetation are restored (we had, for example, changed the current color to black).

3 v Place the 3rd tree symbol 🌳 from the Catalog Window at the very north of the forest.
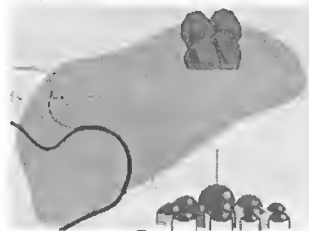
4 v   Working towards the south, place more of the same symbol until
        they will not fit without overwriting a road or river.
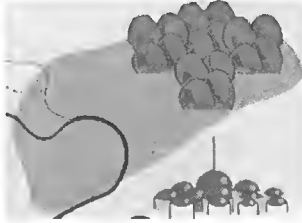
5 v   Change current symbol to the next smaller treetop and, still
        working towards the south, use it to till the remaining gaps.
        Leave a generous margin at the boundary, rivers and roads.
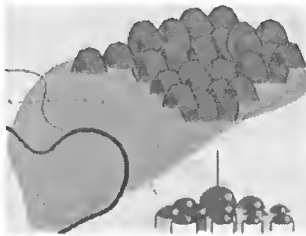
6 v Change symbol to the individual tree .
        Still working from north to south, place this symbol along south
        edges.
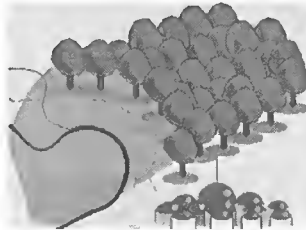
7 v Use the same method to add trees south of the river.
        This area is so small that it will only require two or three single
        treetops with a few individual trees at the front.
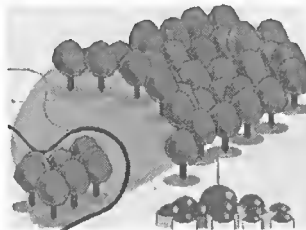
8 ∀ Using **Node Edit** , reshape the river, road or both so it fits the finished forest.

> To **use Node Edit,** click the node you want to move, then where to move it to. To quickly repeat the command, right click.

9 v Using either of the two forest styles, complete the remaining tree'd areas.
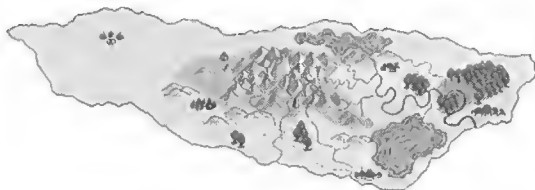
Other tree types

CC2's selection of tree symbols also provides for pine, jungle and mixed forests. Scroll down the Catalog Window to see the selection.

Scattered individual trees

If your style is to use symbol trees, it can look very effective to have single trees scattered around the map. For example, in the highlands you may have a smattering of pine trees.
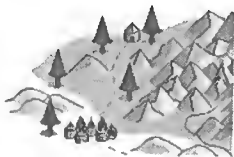
Marsh, swamp and wasteland

CC2 has the ability to till a closed polygon with a repeating symbol. Filling mountains and forests in this way looks too repetitive, but for simple symbols, such as marsh and wasteland, it works very well.

To use my map, open **Tutorial** lO.fcw from CC2's **Tutorials** folder.

1 > **Zoom Window** 🔍 on the eastern base of the mountains.

2 > Click the **Vegetation** icon 🌳.

3 v Click the **FS: Solid** fill style indicator on the Status Bar.
   You see the Fill Style Properties dialog box.
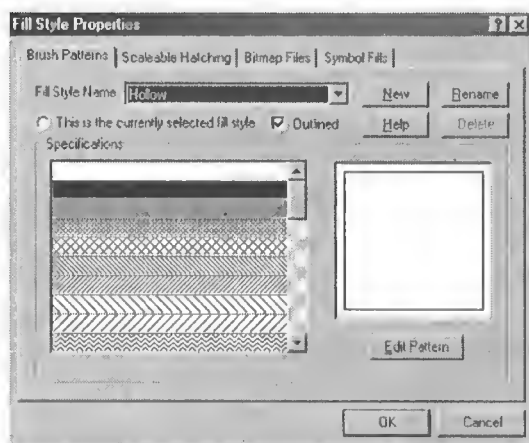
4 > Click the **Symbol Fills** tab.
   You see the page of dialog box relating to symbol fills.
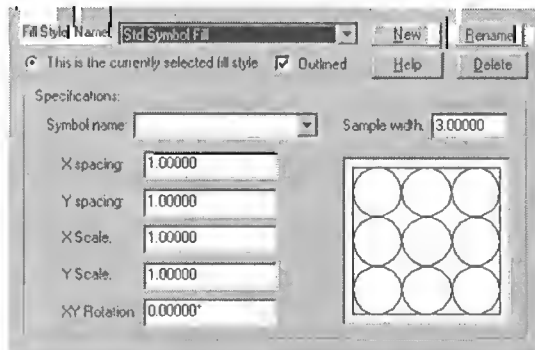
5 9 From the drop down list **Fill Style Name,** select **Marsh Symbol,**
then click **OK.**

The fill style indicator on the Status Bar now says **Marsh Symbol.**

6 v Click the **Smooth Poly** icon 🔲 and draw an area of marsh where
the rivers meet at the base of the mountains.

> By selecting the appropriate symbol fill, you can use the same
> method for **Shrub, Fens, Swamp, Rocky** lands and **Farmland.**

Marsh, swamp and wasteland with a background

To create this effect you need a solid polygon in the background,
superimposed with a second polygon filled with the symbol. The easiest
way to create the second polygon is to copy the first, then change its till
style.

To use my map, open **Tutorial IO.fcw** from CC2's **Tutorials** folder.

1 > Click the **Vegetation** icon 🌳.

CC2 changes the current settings ready for drawing vegetation
features.

2 > Click the color indicator on the Status Bar and change the current
color to ochre (color #133).

Ochre (#133) is recommend for swamp backgrounds. For marsh
backgrounds, use pea green (#23).

3 v Use **Smooth Poly** 🔲 to create a marshy region where two rivers
meet to the south of the mountains
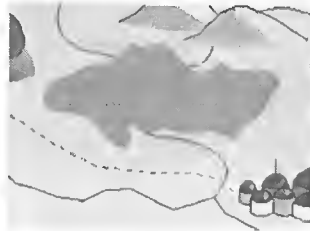
4 > Press ⌷Ctrl⌷C for clipboard copy.
The Command Linereads Select entities (0 picked) :.

5 > Press ⌷P⌷ for **Prior.**
The Command Line reads Select entities (1 picked) : and the
swamp   polygon   is   highlighted.

6 > Press ⌷   for Do It.
The Command Line reads Clipboard origin [0, 0] : . The
clipboard origin will be the insertion point for the copy.

7 > Right click to accept the [0 , 0] default.
The swamp polygon is now in the clipboard.

8 > Press ⌷Ctrl⌷V for clipboard paste.
You see the Insert Part dialog box. You could change the scale or
rotation of the part but, since we want an identical copy of the
swamp,   don't   change   any   values.

9 > Click **OK.**
The Command Line reads Insert at : and the cursor becomes
crosshairs.

10> Type 0,0 then press ⌷Enter⌷
A copy of the entities on the clipboard is pasted into the drawing.
The Command Line still reads Insert   at : and CC2 is ready to
place   more   copies.

> The point you selected as the clipboard origin (0,0) was placed at the
> insertion point, also (0,0).   The pasted copy is therefore precisely on
> top of the original – which is why you can not see it;

1 1 > Right click.
Paste clipboard ends. Now we need to change the fill style of the
copy.
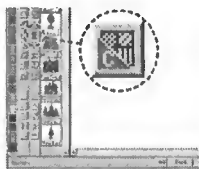
12 < Click the **Change Fill Style** icon.
The Command Line reads Select entities
(0 picked) :.

You can not click the polygon to select it
because that would get both the original and
the copy. Instead.. .

13 > Press ⊞ for **Prior.**

The prior entity, the pasted marsh polygon, is selected and highlighted. We know that only one of the two marsh polygons has been selected because the Command Line tells *us (1 picked)* .

14> Press ⊞ for Do It.

The Command Line reads *Fill style name [dialog]* :.

15 > Right click for the default *[dialog],*

You see the Fill Style Properties dialog box,

16 v Under the **Symbol Fills** tab, pull down the list of **Fill Style Names,** select **Swamp Symbol** from near the end of the list, then click **OK.**

The fill style of the pasted swamp is changed to Swamp Symbol. This copy was added after the original, and is therefore in front of the original, so both are visible without changing the drawing order.

A summary of Forests and Vegetation...

Our map is very nearly complete. Before going on, please check that you understand the following:

✓ The **Vegetation** icon changes the current drawing settings for drawing for vegetation, and loads CC2's vegetation symbols in the Catalog Window.

✓ Drawing the outline to forests early on lets you know how they will effect other map features, and vice versa.

✓ Once the other map features have been drawn, you can come back to the forests to add finishing detail.

✓ The finishing detail should leave a gap around any other features, such as roads, rivers or buildings, within the forest.

✓ To fractalize smooth paths and polygons, in the Fractalize dialog box use a high **Strength** setting to give strong variation, but low **Depth** so not too many new nodes are created. Also, the **Smoothing** box must be ticked.

✓ For symbol forests, add the symbols from north to south using progressively smaller symbol blocks. At the front edges use individual tree symbols.

✓ Adding too many tree symbols slows down the map and can spoil its look.

✓ You can fill regions with a repeating symbol. This works best for simple symbols such as marsh, swamp or rock.

✓ To create a symbol fill with a colored background, superimpose a symbol-filled polygon over a solid-filled one. You can create the second polygon using Ctrl C and Ctrl V for clipboard copy and paste.

✓ When you copy to the clipboard, you choose an origin point for the copy. Then, when you Ctrl V to paste the copy, the origin point you selected will go at the insertion point.

TEXT AND LAYERS

C all me radical, but I think maps need labels. They not only tell you what's where, which is always helpful, but they also add finesse - something that I lack but maps should have in abundance.

Layers
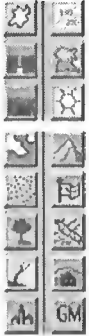
An entity's layer is an invisible property which you can use to easily select, hide and show related map features.

When you click a shortcut icon, one of the things CC2 does is to set the appropriate current layer. For example, when you click the **Mountains** icon, CC2 sets the current layer to **MINERALS/MOUNTAINS.**

When you add an entity to a map, its layer is set to the current layer. Provided you use the shortcut items, map features will automatically be on the correct layer.

Although shortcut icons automate standard layer usage, occasionally you will need to control layers manually. This is easy via the Layers dialog box, which you open by clicking the layer indicator on the Status Bar.

Text labels

The key to good text labels is to keep them simple and consistent. For example, when labeling rivers I always use blue Aria1 font, and the same font height throughout.

Labels don't have a shortcut icon so, before adding the labels, you must manually select the appropriate color and current layer.

To use my map, open **Tutorial 12.fcw** from CC2's **Tutorials** folder.

1　v　Click the layer indicator **L: VEGETATION** on the Status Bar.

You see the Select Layer dialog box.
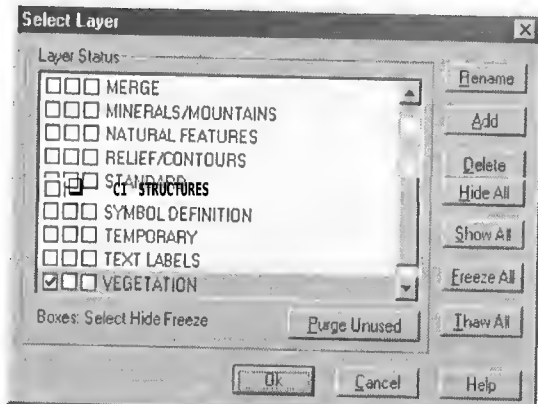
The current layer is marked by a tick in the leftmost box next to it. In the dialog box above, the current layer is VEGETATION.

2　v　Click the leftmost box next to **TEXT LABELS** then OK **to** close the dialog box.

The current layer is now TEXT LABELS.

3　>　Click the black box on the color bar.

Black is now the current color in the **Status** Bar. It will contrast well with the green and blue background colors.
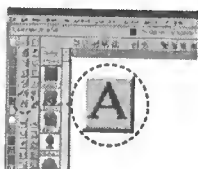
4　<　Click the Text icon,

You see the Enter Text dialog box.

5　<　In the text box, type a name for the island, such as LAG BLOSS.

6　v　Click the Properties... button.

You see the Text Properties dialog box.
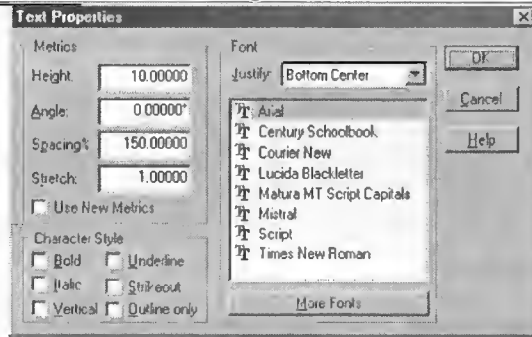
Height   Text height is measured in map units (not point size). Normal size text is approximately 1% of the map height. This map is 800 miles tall, so normal text height is 8-10 units.

Angle   Is the rotation angle of the text. The default angle is 0" to the horizontal. Positive numbers are anticlockwise.

Spacing   The distance between the baselines of consecutive rows of text, given as a percentage of **Height.** The default value is 150% which, if text is 10 high, gives baselines 15 units apart and a 5 unit space between rows.

Stretch   Sets the proportion of the text. A value of 2 would produce text that is twice as wide as normal.

**Font**   Allows you to set the text justification and to choose from the list of fonts already defined in the drawing. To add more fonts to the drawing, click **More Fonts.**

7 > Change to the following settings, then click **OK** to return to the Text Entry dialog box:

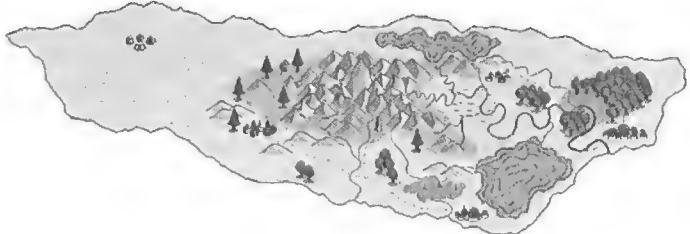   ✓   **Height**   **16**
    ✓   **Stretch**   **2**
    ✓   **Character Style**   **Bold**
    ✓   **Font**   **Times New Roman**

8 > Click **OK** to start placing the text.

    The text L A G B L O S S is attached to the cursor. It is 16 units high, stretched to double normal width and in Times New Roman bold.

9 > Click to place the text north of the island.

L A G   BLOSS

Changing text properties on the fly

The Text Properties dialog box lets you type in any text height and angle. However, instead of trying to think in numbers, you can very easily set the text height, angle and justification as you are placing it.

As an example, we will label the main *River Gemima*, after the duck that discovered it!

---

1 > Change the current color to blue.

2 v Zoom Window over the main river.

3 > Click the **Text** icon A, type **R**. Gemima in the dialog box and then click **OK.**

> The text is attached to the cursor and the Command Line reads
> *Place* (Shift=15°Rot] Shift+Ctrl=Rot, Ctrl=Scale]
> *Keystroke)* *[below prior]* :. The font has gone back to the default – more on that in a moment.. .

> You now have the following options, as per the Command Line:

Shift=15°Rotl	Press Shift while slowly moving the mouse. The text rotates in 15" increments.
Shift+Ctrl=Rot	Press Shift and Ctrl together while slowly moving the mouse. The text rotates freely.
Ctrl=Scale	Press Ctrl while slowly moving the mouse. The text height changes.

Keystroke	Type a number followed by ⏎ The text height becomes the number you entered.,
	Press ⬜ , ⬆⏎ ⬜ or ⬅⏎ The text rotates to horizontal or vertical.
	⊤op, Ⓜiddle or Ⓑottom justification.
	Ⓛeft, Ⓒenter or Ⓡight justification.
	⬅ and ➡ increment and decrement the first number in the text (if it contains a number).

4 v Using ⃞Ctrl to resize and ⃞Ctrl + ⃞Shift to freely rotate, get the label exactly how you want, then click to place it.
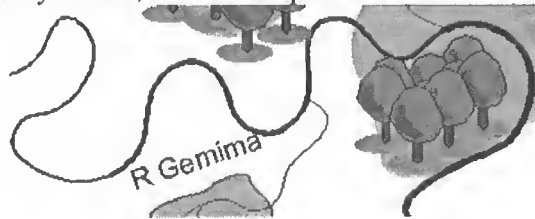
R Gemima

Setting the default text properties for the map

When you added R. Gemima you found that the text properties had reverted to their default settings, instead of the ones you used for LAG BLOSS. This is because you changed the LAG BLOSS settings by clicking the **Properties...** button.
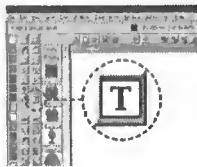
To change the map's default text properties, do so via the **Text Properties** icon. This brings up the Text Properties dialog box but, because you clicked its icon instead of **Properties...,** the settings you choose will become the default.

Finders Keepers

Keep sets the current drawing settings to match the properties of an entity you select. If you use **Keep** on a piece of text, CC2 will change all the text properties (color, line style, fill style, etc.) to match that text.
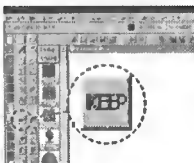
1 < Click the **Keep** icon.
The Command Line reads *Like entity : .*

2 < Click on any road (yes *road, not text).*
The command ends.

3 > Look at the Status Bar.

CC2 has set the current drawing properties to match the road.

| | P 0.000 mm | W 0.0000 | L STRUCTURES | LS Road | FS Solid |

The current color is brown, the layer is STRUCTURES and the line style is Road.

4 ➢ Click **Keep** 𝗞𝗘𝗘𝗣 and now select the baseline of the R. Gemima label,

| | P 0.000 mm | W 0.0000 | L TEXT LABELS | LS Vegetation | FS Solid |
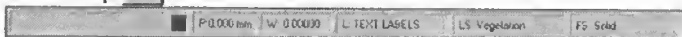
CC2 has kept the color, layer, line style and fill style of the text.

> To select an entity you normally click on any of its edges. Text is an exception, To select text, you must click on its baseline.

Using **Keep** you can come back to river labeling at any time and recreate exactly the same text settings, in a single click.

Outlined text

In some situations text labels are more legible if they are outlined. For example, text over a dark green forest is hard to read if drawn in plain black, but stands out very well if outlined with white.

Outlined text actually involves two text entities: the base text and an outline only copy of the text.

Adding a new layer

It is a good idea to use a separate layer for text outlines; first so they can be hidden if necessary; second so they don't interfere with text searches.

1 > Click the layer indicator **L: TEXT LABELS on** the **Status** Bar.

You see the Select Layer dialog box.

2 > Click the **Add** button, enter *TEXT OUTLINES* as the new layer name, then click **OK.**

TEXT OUTLINES is added to the list of layers in the map.

3 > Click **OK** to close the dialog box.

(Note, by adding a layer you have not changed the current layer setting – it is still TEXT LABELS.)

Drawing the text and its outline

The solid version of the label goes behind the outline, so we will draw it first, then create a copy of it in exactly the same place. Selecting by **Prior,** we will change the properties of the copied text to make it outlined.

---

1 > Click the **Text Properties** icon ⊤ and change the following properties:

   ✓   **Times New Roman** font.
   ✓   **10** height
   ✓   **0** angle
   ✓   **Bold** character style.

2 > Change the current color to **black.**

3 > **Zoom Window** 🔍 over one of the Forgotten Realms style forests.

4 > Click the **Text** icon **A**, type Willardwood in the dialog box, then click **OK.**
   The text is attached to the cursor.

5 > Using ⌃ + ⇧ rotate the text into position, then click to place it.

6 > Press ⌃C for clipboard copy, Ⓟ for **Prior** then Ⓓ for **Do** It.
   The text is selected and the Command Line reads *Clipboard origin* [0,0]:.

7 > Right click to accept the [0,0] default.
   The text is now in the clipboard, with an origin of 0,0.

8 > Press ⌃V for clipboard paste then click **OK** to close the Insert Part dialog box.
   The Command Line reads *Insert at : .*

9 > Type 0,0 then press ⏎
   A copy of the text is pasted precisely over the original,

10 > Right click to stop pasting more copies of the text.
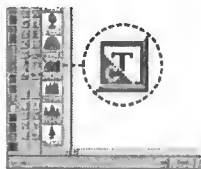
11< Click the **Change Text Properties** icon. The Command Line reads *Select entities (0 picked)* :.

12 < Press ❑ for **Prior** then 🔲 for Do It. You see the Text Properties dialog box ready to change the properties of the pasted text.

13 > Click the **Outline only** setting, then click **OK.** The copy text is now outline only. The outline, however, is still black and on the TEXT LABELS layer.

> At first it looks like the text is white with a black outline, If you redraw, you'll find this is post-edit clutter.

14 > **Change Color** 🔳 selecting by 🅿 for **Prior** then ❑ for **Do** It. The Command Line reads *New entity color [dialog]:*.

15 > Right click to accept the default *[dialog],* or click the white box on the Color Bar, or type 15 (the color number for white). The text : ⬛⬛⬛⬛⬛is now black outlined in white. You may need to click Redraw 🔄 to refresh the screen and see the proper effect.

16> **Change Layer** 🔳 selecting by 🅿 for **Prior** then 🔲 for Do It. The Command Line reads *Layer name [dialog] : .*

17 > **Either** right click for *[dialog]* and select layer **TEXT OUTLINES** Or type *TEXT OUTLINES* then press 🔲] The outline text is now on the new TEXT OUTLINES layer.

Multi-line text

Multi-line text is CC2's jargon for having more than one line of text. There are two ways you can do this, and both are easy.

1 > Click the **Text Properties** icon and set these text properties:
   - ✓ **Times New Roman** font.
   - ✓ 30 height
   - ✓ 0 angle
   - ✓ **Bold** character style.

2> Click the **Text** icon 🅰.

3> In the Text Entry dialog box, click the **Multi-line** option.
   The text box grows to accept more than one line of text.

4 ➢ Enter a multi-line title for the map such as
                South   Lagyuru
                and Lag ***Bloss***   island
   then click **OK.**

5 ➢ Press 🆃 then ⬜   for top left justification.

6 ➤ Click to place the title in the top left corner of the map.

> **South Lagyuru**
> and Lag Bloss   island
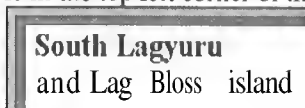
7 ➢ Right click to repeat **Text,** type (pre cataclysm) and then
   click **OK.**
   The default value shown on the Command Line is *[below prior],*

8> Right click to accept the default.
   The new text is placed under the last entry. The space between
   baselines is 150% of the text height, as set by **Spacing** in the Text
   Properties dialog box.

Editing   text

After text has been added to a drawing, you can change its content with
Edit.

To use my map, open **Tutorial 13.fcw** from CC2's **Tutorials** folder.

1 < Click the **Edit** icon.
      The Command Line reads *Select entity:,*

2 < Click on the baseline of the "(pre cataclysm)"
      text.
      You see the Edit Text dialog box.

3 > Replace "pre" with post, then click **OK.**
      The map text is updated. No doubt the island's population will be
      grateful for this change. Little do they know. *Bwu-ha-ha!!!*

Changing text properties

You can change the style of existing text with **Change Text Properties.**

In this example, we will reduce the text height of the text line "and Lag Bloss island". The only complication is that, because the text was drawn as mult-line, the change would normally affect "South Lagyuru" as well.

To change one line of multi-line text, you must first **Explode** it. **Kaboom.**

---
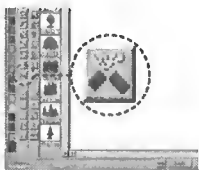
1 < Click the **Explode** icon.
   The Command Line reads *Select entities (0 picked) :.*

2 < Click on the baseline of either "South Lagyuru" or "and Lag Bloss island".
   The two lines of text are selected with the one click (evidence that they are one entity).

3 > Right click then pick **DO** It from the popup menu,
   There is no visible difference in the map, but the selection is now two separate lines of text.

4 v Use Change Text Properties on the "and Lag Bloss island" and "(post cataclys m)" lines of text to change their **Height** to 25.

> **South Lagyuru**
> and Lag Bloss island
> (post cataclysm)
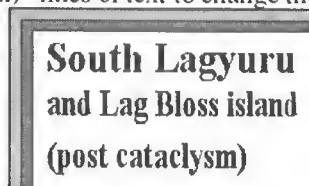
Searching files for text

CC2 has the ability to search files for text.

---
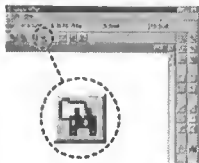
1 < Click the **Find in Files** icon.
   You see the Search Files for Text dialog box:
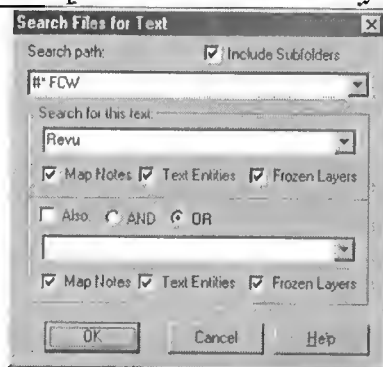
2 > Under **Search path,** select **#*.FCW.**

What does **#*.FCW** mean?

#	searches the folder where CC2 is installed.
$	searches the folder where the current map is located.
*	means all.
.FCW	is CC2's file type.

#*.FCW therefore means search all FCW files in CC2's folder and
$*.FCW means search all FCW files in the folder of the current map.

---

3 > Make sure **Include Subfolders** is clicked.
This means CC2 will search all folders under CC2's folder.

4   In **Search for this text** type Revu.

5 > Make sure **Map Notes, Text Entities** and **Frozen Layers** are ticked.
These are the areas in each map where CC2 will search.

6 > If you wanted to search for two keywords, tick the **Also** box and
enter the required values.
Or will find files that contain **Keyword 1 or Keyword 2.**

And will find files that contain both **Keyword 1 and Keyword 2.**

7 > Click **OK.**
CC2 searches all maps in all subfolders under your CC2 folder for
the text "Revu". The search may take some time, but returns with
the Bookmarks dialog box.
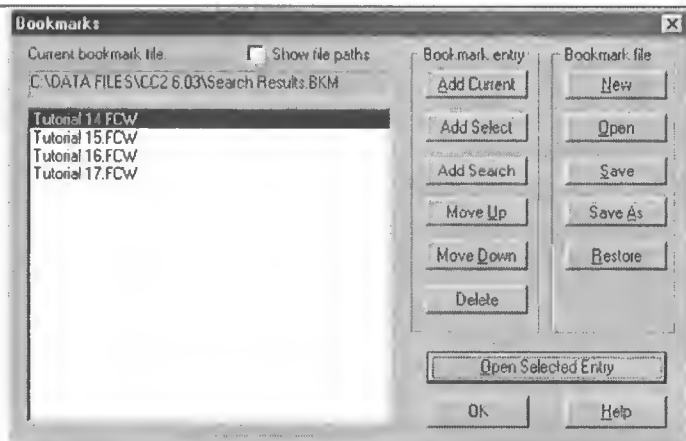
As you can see, this dialog box contains many Bookmark options. These are explained in CC2's help system.

8 > Highlight **Tutorial 14.FCW** then click **Open Selected Entry.**
The **Tutorial** 14 map loads. It is similar to the one you were working on, except I've sneaked in some special features.

Zoom to Text

CC2 found the **Tutorial** 14 file because it contains the text "Revu". But where is it?

1 > Select **View Menu >> Zoom to Text.**
You see the Zoom to Text dialog box.
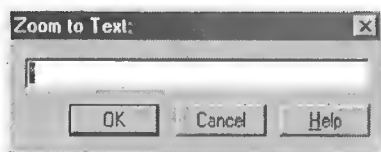
2 > Type in *Revu* as the text to find, then click **OK.**
CC2 zooms to **Knob,** a standing stone marking his grave.

3 > Click **Zoom Out** 🔍 to get a clearer view of where this feature is in relation to the rest of the map.

The text to find can include special characters.. Type ***** to match any number of characters and **?** to match one character. Also, if the text must match exactly, you can put **=** at the start of the search text.

For example:

Typing **house** matches any text with house in it (e.g. *The House* and *Harbormaster's House*).

Typing **=house** would only match the text *house* (not *The house* or *House of Fun*).

Typing **=The*** would match any text starting with *The* (*The house*, not *House of Fun*).

Typing **h*s** would match *Harbormaster* and *House*.

4 > Repeat **Zoom** to **Text,** this time typing **R . *** as the text to find.
There is more than one match, so CC2 lists the matched text:
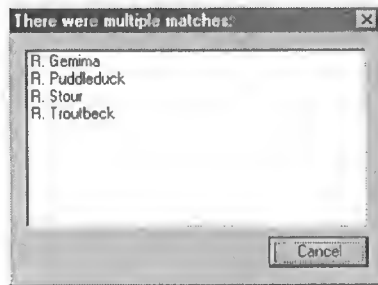
5 > Click on **R. Gemima.**
CC2 zooms to the location of the **R. Gemima** text.

If there is only one matching text, CC2 will zoom to it straight away. If there are no matches, CC2 retains the current view. If there is more than one match, CC2 will list the available choices:

A summary of Text and Layers...

This chapter has covered everything you need to know about placing text and making it look exactly how you want. It has also introduced the concept of layers.

✔ Every entity has a layer property. When an entity is created, its layer is set to the current layer.

✔ Click the layer indicator on the Status Bar to bring up the Layers dialog box. This gives you complete control over layers.

✔ If a map has lots of entities, hide optional layers to reduce redraw times.

✔ If you set text properties as you are placing text (either by clicking the Properties button on the Enter Text dialog box, or on the fly), the changes affect that text only.

✔ You can resize and rotate text, and change its properties, while you are placing it.

✔ To set the map's default text properties use **Text Properties or Keep** on an existing line of text.

✔ Outlined text has two copies of the text: the solid version and the outline version.

✔ Explode multi-line text before you editing individual lines.

✔ **Find in Files** lets you search map files for text.

✔ **Zoom** to **Text** lets you find and zoom to text in your maps.

FINISHING TOUCHES

The essential finishing touches to any map are a scale bar to show how much is big and a compass rose pointing to north.

Further embellishments you might like to add are a grid, olde-worlde navigation lines, decorative ornaments and, maybe, a few there-be-monsters. For the purposes of this tutorial, I'll assume you're going the whole hog.

In line with the progress you are making, the tutorial is gradually making more assumptions about your knowledge. For example, from here on it is assumed that you will use zoom icons to get a better view and that you'll right click to repeat commands - the tutorial will not explicitly tell you to do so.

Inserting a Scale Bar and Compass Rose

CC2's **Parts** folder contains a selection of pre-drawn decorations for your maps. Amongst these are scale bars and compass roses.

To use my map, open **Tutorial 13.fcw** from CC2's **Tutorials** folder.

---

1 > Select **Insert Menu >>** Insert **Part.**
You see the Part to Insert dialog box.
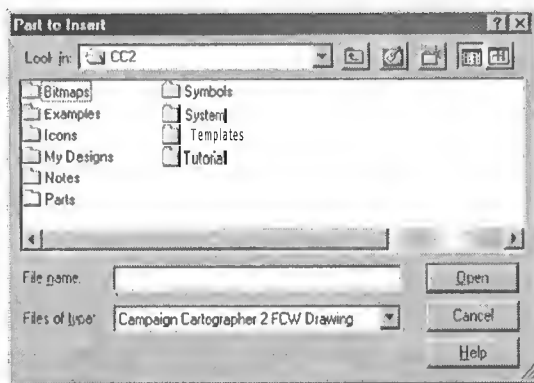
2 > Double click on the **Parts** folder, then **Maps** and finally Scale **Bars.**
You see CC2's selection of pre-drawn scale bars. Each is named with its size, divisions and features.

3 > Click on **200 mile in 20 miles (Standard)** then click **Open.**
You see the Insert Part dialog box with options to scale and rotate.

There is no need to rotate the scale bar, and you definitely don't want to scale it (a scaled scale bar is pretty useless).

4 > Click **OK** to close the dialog box.

The Command Line reads *Insert at* : and the cursor becomes crosshairs.

5 > Click in the bottom right corner of the map.

The scale bar is inserted with its bottom left corner at the point you clicked.

Unless you are very lucky, the scale bar is in the wrong place and needs moving.
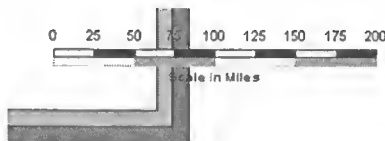
The Command Line still reads *Insert at* : .

6 > Right click to stop placing copies of the scale bar.
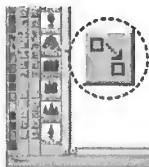
7 < Click the **Move** icon.

The Command Line reads *Select entitles (0 picked)* :.

8 < Press ☐ for **Prior** then Ⓓ for **Do** It.

The scale bar is selected and the Command Linereads *Move from point:*.

9 > Click anywhere on the map.

The *move from* point is set. Now as you move the cursor, an abbreviated version of the scale bar follows it.

A stretching line from the reference point you clicked shows how far you have moved the selection.

10 > Position the scale bar as you like, then click to place it.
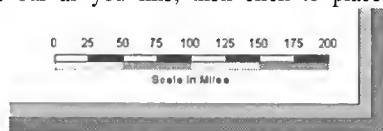
11 > Select **Insert Menu > > Insert Part.**

The default folder and part is taken from the last part you inserted in this mapping session.

12 > Change to CC2's **Patts\Maps\Compass Roses** folder and double click on **Fancy.**

You see the Insert Part dialog box.

13 > In the **XY Rotation** type *-10* then click **OK.**

The Command Line reads *Insert at : .*

When you create a part, you are asked for its origin. When you insert a part, the part's origin is placed at the insertion point.

For shapes that are essentially round, such as a compass rose, the normal origin / insertion point is the center. We can use this to help us neatly center justify the compass rose and the scale bar.

14> Click the **Endpoint** modifier icon

The Command Line reads *entity* . CC2 wants to know which endpoint.

15 > Click in the middle of the scale bar, at the endpoint of the tan box, as shown here:

The compass rose is inserted. Its center point is precisely at the endpoint in the middle of the scale bar's bottom edge. Now it needs to be moved vertically.
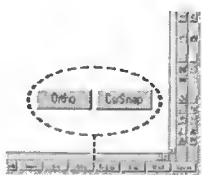
16 < Click to depress the **Ortho** and **CsrSnap** buttons.

Ortho forces the next point you click to be either vertical or horizontal from the last.

CsrSnap means that the cursor will only move (snap) onto allowed points.

The Command Line still reads *Insert at :.*

17> **Move** the compass rose, selecting it by then so it is above the scale bar. (Selecting **Move** cancels the Insert Part)

Ortho and **CsrSnap** are enabled so the cursor will only move horizontally or vertically. Without **CsrSnap** the cursor would move freely but jump to the nearest allowed point at the time you clicked.

Before you clicked Move, the insert part command was still running. One way of ending a command is to start another, and that's exactly 'what you did here. Starting **Move** ended Insert **Part.**

Grid overlays

CC2 can generate hex and square grid overlays of any size and spacing. Before adding a grid overlay, it is a good idea to create a layer for it, so the overlay can he easily hidden when not wanted.

A square grid overlay

1 > Click the Layer indicator to bring up the Select Layer dialog box.

2 > Select *HEX/SQUARE* and set it as the current layer.

3 > Click the color indicator on the Status Bar and set the current color to a dark gray.

4 > Click the Line Style indicator on the Status Bar and select a dashed line style.

5 > Select **Draw Menu >> Square Grid.**

The Command Line reads Square grid spacing [IO. oo] .

The distance across our map is 1000 miles, so a grid spacing of 10 would create a very fine grid.

6 > Type 50 as the grid spacing, then press [Enter]]

The Command Line reads First corner of square grid [o, 0] and the cursor becomes crosshairs.

7 > Right click to accept the [0 , o] default.

The bottom left corner of all CC2's original map templates is located at 0,0. The first corner is fixed and now, as you move the mouse, the grid grows and shrinks.

The Command Line reads Second corner of square grid:.

If you cast your mind back to the very start of this map, we based it on a 1000 x 800 mile template.

8 > Type 1000, 800 followed by [Enter] or, snapping to the grid, click at the top right corner of the map.

The grid is drawn on the current layer in the current color and line style.

Hex grid
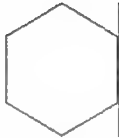
Hex grids are used more often than square grids on overland maps and have many more options so CC2's Hex Grid command not only gets its own icon, it also gets a dialog box to control its appearance.
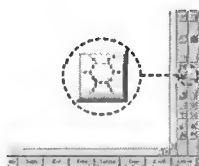
1 < Click **Hex Grid.**

You see the Hex Grid dialog box.
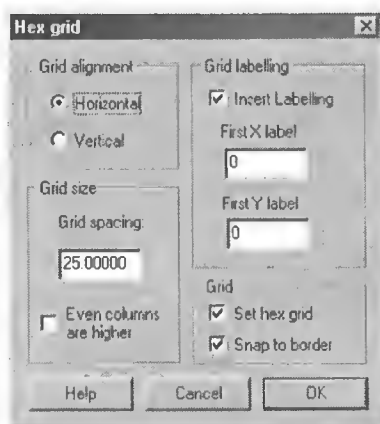
Grid Alignment	**Vertical** **Horizontal**
Grid Labeling	If you tick **Insert Labeling** then CC2 will add a number label to each cell. You can set the start numbers in the **First X Label** and **First Y Label** boxes.
Grid Size	The distance between parallel sides of each hex. Set a number appropriate to the map size.
Even columns are higher	Causes the top of the second column to be higher than the top of the first column.
Grid	**Set hex grid:** Changes the grid and snap so that you can snap to important parts of the hex overlay. **Snap to border:** Provides additional snap points at the midpoints of hex edges.

Set **hex grid**
enabled

and **Snap to border**
enabied
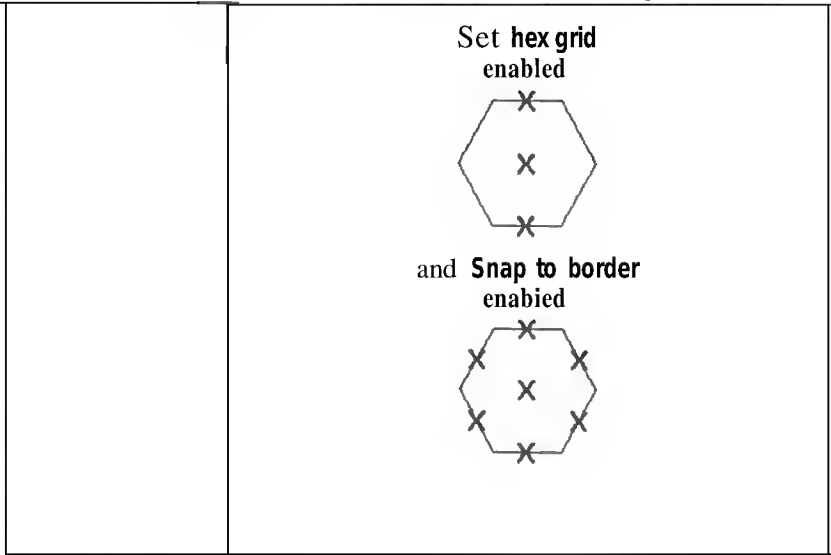
2 > Select the options you want, then click **OK.**
The Command Line reads *First corner of hex grid:* and the
cursor becomes crosshairs.

3 > Select the bottom left corner of the map.
Easy ways to place the point accurately are: to type the coordinates
0 , 0, or to use the **Endpoint** modifier on the horder.

The Command Line reads *Second corner of hex grid:.* As you
move the cursor, the hex grid shrinks and grows.

4 > Click to place the top right corner.
The hex grid is drawn and labeled as you specified.

Navigation lines

Despite our sailing credentials, nobody here knows what navigation lines
(navlines) were for, except they give a map an authentic look. If you
prefer purely functional maps, you'll probably want to do without them.

Navlines from a Template

If you know from the outset that you would like navlines on your map,
the simplest method is to select a template that includes them before
creating the map.

1 > Click the **Template** icon
You see the Select New Drawing Template dialog box.

2 > From CC2's **Templates\Maps** folder, select **1000 x 800 (with navlines).FCT** then click **OK.**

The new template, with navlines, has been selected.

3 > Click the **New** icon ▢│

CC2 asks if you would like to save the changes to your existing map, which you do.

The new map included navlines on the NAVIGATION LINES layer. At any time you can hide the navlines by clicking the layer indicator on the Status Bar and hiding the layer.

You can, of course, edit or add to the navlines.

Adding your own navlines

Navigation lines are also available as a part file to be added to any drawing then trimmed.

To use my map, open **Tutorial 14.fcw** from CC2's **Tutorials** folder.

1 > Click the layer indicator on the Status Bar, add a new layer called **NAVIGATION LINES** and set it as the current layer.

The layer indicator on the Status Bar should read **NAVIGATION LINES.**

2 > Select **Insert Menu** >> Insert **Pat-t** then pick **Navigation lines (200 mile diameter)** from **CC2's Parts\Maps** folder.

You see the insert part dialog box.

If you have continued straight from the previous example, the default rotation is $350°$ (the same as $-10°$). The navlines should align with the compass rose, so this is the angle we want.

3 > If necessary, type 350" (or -10") as the rotation angle, then click
OK.

4 > Place two copies of the navline part, then right click to stop
inserting   parts.
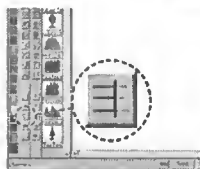
5 < ClickTrim to **Entity.**

The Command Line reads *Select   entity   to
trim to:.*

CC2 wants you to select a boundary entity to
which other entities are shortened or
lengthened. In this case it's a map border.

6 > Select the inside edge of the western map border.

The edge you selected is highlighted and the prompt reads
select entity to trim:.

7 > For both parts, click on all the navlines that you think will intercept
the western map border.

It doesn't matter if you make a mistake · just ignore it and keep
selecting.

If you accidentally miss, it will cancel **Trim to Edge.** To restart it,
right click to repeat the last command, reselect the cutting edge,
and then keep going.

8 > When you've trimmed all the lines that intersect the western map border, right click to cancel the command.

9 > Right click to repeat the **Trim to Entity** command, this time trimming to the northern map border.

10 > Repeat the same process for the southern and eastern borders. Now all that we need do is put the navlines behind the land.

The current drawing order is sea >> land >> land features, etc >> navlines. The simplest method is to bring the navlines just in front of the sea background. In this position they will show over the water, but behind the land and anything drawn on the land.

To select the sea background without picking the border, you must first hide the MAP BORDER layer.

South Lagyuru
and Lag Bloss Island
(post cataclysm)

LAG BLOSS
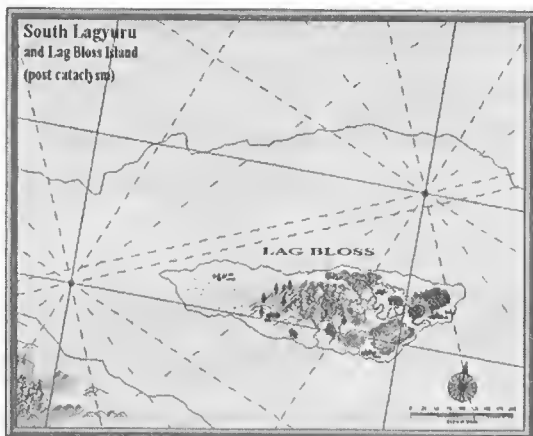
11 > Click the layer indicator on the Status Bar and then the middle box next to **MAP BORDER.**
A small H appears in the box, showing it is hidden.

☐☐☐ HEX/SQUARE GRID
☐Ⓗ☐ MAP BORDER
☐   [70 MERGE

12 > Hide the **HEX/SQUARE GRID** layer, too. Click **OK** to close the dialog box.
The brown border is now hidden, enabling you to see the edge of the blue sea background box. We hid the HEX/SQUARE GRID layer because it has a line on it, enabling you to trim to when the map border is hidden, but you don't want to send your navlines behind that.

13 ➢ Use **Bring in front** of ⊞ to bring the navlines in front of the blue sea   background.

You can select the navlines either by clicking on each one, or with two selection windows, or by layer NAVIGATION LINES.

14 > Click the layer indicator and show the MAP BORDER layer by clicking the **H** next to it.

Other decorations

There are lots more ways to decorate a map.

✓ www.profantasy.com contains a library of maps and parts contributed by other CC2 users. For example, L. Lee Saunders contributed the beautiful shield and ship that I used to complete **Tutorial 16.fcw.** You insert these parts in exactly the same way as the scale bar and compass rose. Map library contributions (current at the time of printing) are also included on the CC2 CD-ROM.

✓ Click the **Coast/Sea** icon to load CC2's sea symbols. These include sea monsters, tidal rips and jagged rocks.

Wave	Waves	Whirlpool	Rock at Sea	Rocks at Sea	Waterfall	Ship, Raider	Ship
Reef	Lighthouse	Lighthouse at	Geyser	Anchor	Sea Monster	Sea Monster	Sea Monster
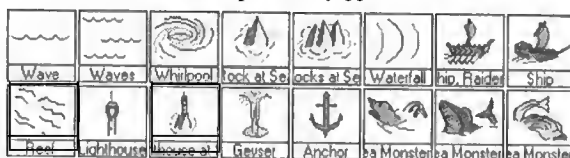
✓ Click the **Borders/Political** icon to load   symbols associated with land:

Chaos	Law	Balance	Good	Evil	Dwarves (Ax	Elves (Bow
Druid	Horse	Coins	Gem	Crown	Arrow	Battle Site
Magic Circle	Pentagram	Snowflakes	Shield 1	Shield 2	Shield 4	Ribbon

✓ Using **Write Part** from the Insert menu, you can create your own parts from anything you have drawn in CC2. You might even consider contributing them to the map library!

A summary of Finishing Touches...

These are the new facts and concepts introduced during this chapter.

- ✔ Anything you have drawn can be written as a part, then reused in other maps.
- ✔ Every part is saved with an origin point. This is the point that is use as the insertion point when you insert the part.
- ✔ Before inserting a part you have the option to numerically scale or rotate it.
- ✔ Once a part is inserted, you can use Move to visually scale, rotate and position it.
- ✔ Ortho forces the next point you click to be vertical or horizontal from the last.
- ✔ Snap forces your click to the nearest snap point.
- ✔ If the CsrSnap button is enabled, the cursor will jump between allowed coordinates. Otherwise, it will move smoothly across the screen, but points clicked will still be affected by Ortho and Snap.
- ✔ Control grid and snap settings by right clicking over the Snap, Grid, Ortho or CsrSnap buttons.
- ✔ Using Trim to Entity you select a cutting edge, then any entities you want to shorten or lengthen.
- ✔ www.profantasy.com contains a library of downloadable user contributed parts and maps.
- ✔ Varicolor symbols are inserted in the current color.
- ✔ You can scale symbols as you are placing them, either visually or, by right clicking, numerically.

ADVANCED MAPPING

You will have realized by now that CC2 is a huge program. The manual to this point has shown you the essentials you need to create great maps, while resisting the urge to plunge into technical detail. There is a lot more to CC2!

From here we'll look at techniques and methods which, while nonessential, give you more options and flexibility with your map making.

Learning by yourself

This manual doesn't cover every CC2 command, nor does it answer every CC2 question. What I hope it does is get you to a point where you can learn by yourself.

Don't be afraid to experiment, Go through every menu and icon trying things out. CC2 commands all work very similarly and, so long as you keep an eye on the Command Line, you'll know what to do next. For example:

1 > Select **Draw Menu >> Ellipses >> Center and Axis Points.**
   Even though I have not mentioned this command before, by watching the Command Line you can see what to do next.

   The Command Line reads center   [0.0000,0.0000]   :.

2 > You need to place the center point for the ellipse. You know that you can click to place a point, use a modifier icon, or right click to take the default..

3 > And soon...

If you get stuck, remember to look in CC2's Help system It describes the function and use of every CC2 c o m m a n d.   ..

Modifying and creating templates

Whenever you start a new drawing, it is based on the current template, which is selected via the **Template** icon. A template is simply a normal map, which you build to a suitable starting point for new maps, then save as a template.

Whatever has been drawn or defined when the map is saved as a template will be created in any new maps based on the template.

Templates have a .fct file extension.

To modify an existing template

4 ➤ Click the **Open** 📂 icon
     You see the Load Drawing dialog box.

5 ➤ Select **Campaign Cartographer FCT Template** from the **Files of Type** list.
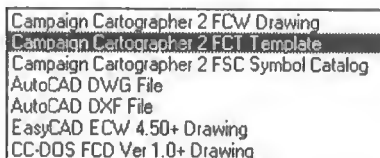
6 ➤ Change to CC2's **Templates** folder, then to the subfolder for the type of template you want, and then click on the template file to edit.

7 ➤ Make any changes to the template.
     You can change anything you like, such as pre-defined fill styles, line styles, layers, fonts and grid systems; the current color, fill style, line style and line width: and settings for **Grid, Snap** and **CsrSnap.**

8 ➤ Add or edit any pre-drawn entities you want. For example, you might want to add a color contour bar, an extra drawing window or a scale bar. You could erase the existing map border and draw a new one. If the map border is significantly larger or smaller, you might need to re-scale the symbol fill styles.

9 ➤ Click **Save** to save the changes.

The'next time you open a file, the default file **type** will **be Campaign Cartographer FCT Template.** To see your other files, reselect the **.FCW** file type.

To create a new template from scratch

1 > Click the **Open** icon
You see the Load Drawing dialog box.

2 > Select **Campaign Cartographer FCT Template** from the **Files of Type** list.

3 > In the **File Name** box, type the name of a new file (that does not already exist in the selected folder) then click **OK.**
CC2 asks if you want the file created.

4 > Click **Yes,** you do want the new file created.
You see a new template. It is so raw, the background isn't even white. This drawing has no predefined entities or setting except the very basic standard defaults. You need to create every fill style, line style, layer and grid system that you want, plus and pre-drawn entities such as a map border.
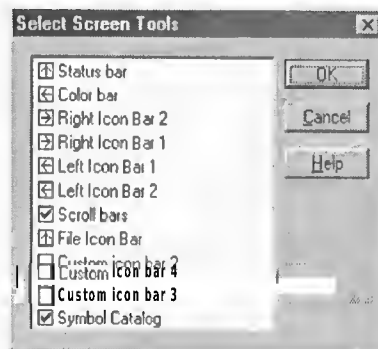
> To set the background color, **select View Menu > > Background Color.**

Modifying the screen layout

At the bottom of the drawing window is a hammer. Well, not literally, but there is a **Hammer** button. Clicking this brings up CC2's Select Screen Tools dialog box:

Beside each screen tool is a box containing either an arrow, a tick or nothing.

✓   If it is an arrow, it points to the side of the drawing window where the tool will be located.
✓   If it is a tick, it says the tool will be displayed, but there are no options about where.
✓   If it is blank, the tool is not displayed

Click on each box to switch between its possible values.

Creating a decorative Coat of Arms

Our heraldic symbols are based on a mixed bag of historical examples. We make no pretence to follow any rules of heraldry in these examples (it's for fantasy games, right)?

The Shields heraldic template

1 > Click the **Template** icon ⬛ and select **Shields.fct** from CC2's **Templates\Other** folder.
 From now on, new maps will be based on the **Shields.fct** template.

2 > Click the **New** icon ⬛.
 The new map has two drawing windows - the bottom contains shields (Ordinaries), and the top contains a drawing area and the colors (Tinctures). All these features are created by the template.

3 > Click the **Catalog...** button at the top of the Catalog Window then select **Charges.fsc** from CC2's **Symbols\Other** folder.
 The Charges symbol catalog loads in the Catalog Window. The symbols in the top half of the list are all black.

> Each of the shortcut icons loads an appropriate symbol catalog in the Catalog Window. You can also load symbol catalogs manually by clicking the Catalog... button, as you did here.

4 > Select another color from the color bar.
 The charges change color to match the new current color. This type of symbol is known as a varicolor symbol.

5 > Move the cursor over the Catalog Window and right click.
 The Catalog Window is shown as a full page, so you can see all the Charges at once.

 Some of the Charges do not have the color you selected - these symbols are **Proper,** meaning they maintain their own natural color.

> You can right click over the Catalog Window to see a full page listing of the symbols. Right click again to get back to the normal list.

Copying the shields

The **Shields** template is set up to allow you to copy shields from the lower drawing window into the upper drawing window, change their properties, then add heraldic symbols from the symbol catalog.

---
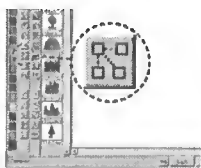
1 4 Click the **Copy** icon.

> The Command Line reads *Select entities (0 picked)* :.

2 > Select the white shield in the bottom left, then right click and **Do** It. In the case of this shield, you can select it by clicking its edge. The other shields contain more than one entity, so it is easiest to select them by clicking a window that contains the selection.

> The Command Line reads *copy from point* : ,

3 > Move the mouse around.

> The **Grid, Snap** and **CsrSnap** buttons are depressed (how they were saved in the Shields template), so the cursor is forced to snap to grid points. Since the shields were positioned on grid points, it is easy to select their corners precisely.

4 > Click at the top left corner of the selected shield.

> The Command Line reads *Place* : . CC2 wants to know where to put the copy.

5 > Move the mouse into the upper drawing window and click at the upper left grid point in this window.

> The white shield is copied to where you clicked.

6 > Right click to stop copying.

7 > Click the **Change Color** icon selecting by **Prior** then **Do** It.

> The Command Line reads **New entity color [dialog]:.**
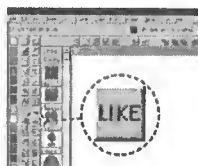
8 4 Click the **Like** icon.

> The Command Line reads *entity* : ,

9 4 Select the edge of the sky blue tincture box.

> The copied shield is now sky blue.

> During a change command, **Like** sets the property of an entity (e.g. layer, color or iine style) equal to the same property of an existing entity that you select.

About the shields

The bottom window contains two types of shield. Those on the left are made of multipolies, exactly as they look:

The two in boxes are composites, made up of many squares or diamonds. By changing the color of individual squares, you can create your own patterns. The shields on the right are examples of what you make.

Adding the Charges

Now you've got a black shield to work with, it's time to add the Charges from the Catalog Window.

We will place two Leopards, one above the other, using **Keep** to set their color. To fit the Leopards in the shield, we will need to change their size while placing them.

---

1 > Click the **Keep** icon ▢ then the edge of the gold colored box (top left tincture).
   CC2 sets the current color to match. The varicolor symbols in the Catalog Window also change color.

2 > Click the **Snap** button to disable Snap.

3 > Scroll down the Catalog Window and select the Leopard symbol.
   The Leopard symbol attaches to the cursor. It is currently too big for two of them to tit in the shield.

4 > Press ▢ while slowly moving the mouse towards you.
   As you do, the symbol gets smaller. If you move the mouse away from you, the symbol gets bigger. Don't place the Leopard yet.. .

5 > Right click.
   You see the Symbol Parameters dialog box.
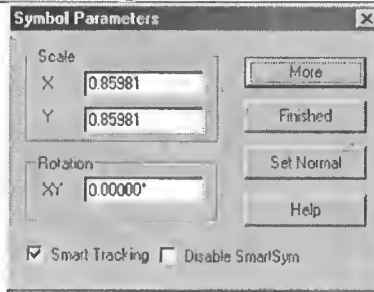
The values shown in the X and Y **Scale** are the result of resizing the symbol via the 〈Ctrl〉 key.

6 > Type in an X Scale value of 0.8 then click **More.**
The symbol is now 0.8 of its original size.

> When you changed the X Scale, the Y Scale automatically changed to match. To set different X and Y values, change the X first, then change Y (X does not automatically update from Y).
>
> If you lose track of the symbol scale, right click to bring up the Symbol Parameters dialog box then click Set Normal. This resets the X and Y Scale to 1 and the Rotation to 0.

7 > Click to place the first Leopard in the upper half of the shield.
One copy of the symbol is placed where you clicked. The same symbol is still attached to the cursor, ready to be placed again.

8 > Click to depress the **Ortho** button.
The cursor is now constrained to moving horizontally or vertically from the last point you used. In this case it is the insertion point for the first leopard. **Ortho** will ensure that the second leopard is placed directly below the first.

9 > Place the second Leopard below the first.

10 > Right click to bring up the Symbol Parameters dialog box and then click **Finished** to complete the symbols.

Writing a part for reuse

Anything you have drawn can be written as a part, and reused in exactly the same way as the compass rose and scale bar.

To use my example, open **Leopard shield.fcw** from the **Tutorial** folder.

1 > Select **Insert Menu >> Write Part.**
   You see the Create Part Name dialog box.

2 > Change to CC2's **Parts\Maps** folder, type Leopard shield as the part name and then click **Save,**
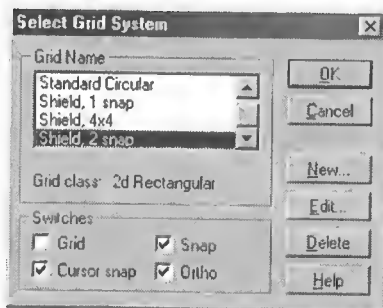   The Command Line reads Select entities (0 picked) :.

3 > Click opposite points of a window containing the two Leopard shield then right click and DO It.
   The Command Line reads Part origin : . CC2 wants to know the insertion point (0,0) for this part.

4 > Right click on the Snapbutton.
   You see the Select Grid System dialog box.

5 > Select **Shield, 2 snap** from the list of available grids then click **OK.**
   This grid setting will force the cursor to snap to every grid point and a point in between.

6 > Check the Snap checkbox -this is an alternative to the **Snap** button to activate snapping.
   The Command Line still reads Part origin : .

7 > Click at the snap point in the middle of the shield.
   CC2 creates the part tile with the insertion point that you selected.
   Write Part ends.

Multiple drawing windows

The Shields example rather nonchalantly used more than one drawing window. This is a powerful feature of CC2, worth looking at.

CC2 allows you to have more than one window on your drawing, with each window able to show a different zoomed view. A typical use of this is to have a map overview in a small window (zoomed to extents) while you work in detail in a large, close-up window.

The active window (the one where zooms happen) is highlighted with a red border. To select the active window, click its Title Bar.

1 **>** Open **Tutorial 16.fcw** from CC2's **Tutorials** folder.

2 > Select **View Menu >> Windows   New Window.**

The Command Line reads *new window corner:*.

3 > Click opposite corners of a small window in the top right of the map.

The window is created. By default it is the active window, and zoomed to the same view as the original window.

4 > Click the Title Bar of the main window.

It regains the status of active window, and is highlighted by a pixel-wide red border.

5 > Click the **Zoom Window** icon [icon] and, in the new small drawing window, select an area to zoom to.

The view in the main window changes. The small window is not changed.
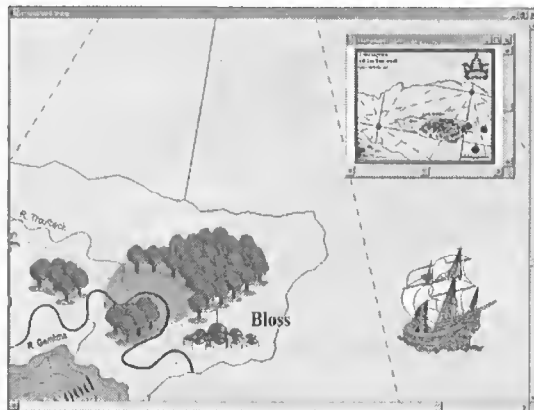
6 > Select **View Menu >> Windows >> View Sets.**

You see the Drawing View Sets dialog box.

7 > Click **New** then type a name for this view set, such as Overview. The view set is saved with the drawing. It can be restored at any time from the Drawing View Sets dialog box.

In this example, the small overview window is always on top of the main window. This is because the preference Options >> Preferences >> Maximized windows cover other windows is disabled.

If your main window covers the overview window, or any other windows, it is because the Maximized window... setting is enabled.

Precision   drawing

For most overland maps, you only need to be precise when drawing up to the map border or when creating multipolies that require perfect joins. Apart from that, it generally doesn't matter whether a tree is here or slightly to the left of here.

When drawing close up, however, precision starts becoming important. House corners normally want to be square. 10' wide passages want to be 10' wide, not 12. Iris doors on a starship want to be symmetrical, not buckled.

CC2 can be as precise as you want to be. You can:

✓   Place points precisely by using snap and the grid.

✓   Place points precisely on an existing entity by using a modifier such as Endpoint, On or Midpoint.

✓   Place points precisely on an existing entity by using Attach mode

✓   Place points by eye by clicking at the desired location.

✓   Place points precisely by typing an x , y coordinate. At all times the cursor coordinate is shown on the Status Bar.

✓   Place points precisely by typing a coordinate relative to the last point used. Relative coordinates start with **@.** For example, **@2,3** means _at_ 2 across and three up from the last point.

✓   Place points precisely by typing an angular coordinate relative to the last point used. Relative angular coordinates start with **<.** For example, **<30°,3** means "3 units away at an angle of **30°". 0°** is east, 90" is north.

The drawing grid

One of your main aids in precision drawing is the Grid. It can be turned on and off in seconds using the 3 buttons at the bottom of the drawing window **– Grid, Snap** and **CsrSnap.** Related, but different, is **Ortho.**

Grid – When enabled, **Grid** shows a black dot at each grid point. These dots are for your reference only, and do not appear in print-outs.

Snap – Between each grid dot is a number of invisible "snap points" (set in the Grid dialog **box).** When **Snap** is enabled, CC2 locks any points you place by eye to the nearest snap point. CC2 ignores snap when you are selecting entities for editing or specifying points with typed coordinates or modifiers. The grid does not have to be visible for **Snap** to work.

CsrSnap – Forces the cursor to move between allowed coordinates only. If **Snap** is disabled then all coordinates are allowed, so the cursor moves smoothly. However, if **Snap** is enabled, only snap points are allowed so the cursor appears to jump as it moves.

Ortho forces the next point you click to be horizontal or vertical from the last. It is particularly useful for drawing straight-line shapes, but not suitable for curves.

> When you zoom out, CC2 displays more drawing area and hence more grid points. If you zoom out far enough, the grid density will become too great to be useful, at which point the grid no longer displays. Similarly, if you zoom in far enough, all snap points will be outside the drawing window, so you won't be able to select points with the cursor.
>
> As you zoom in and out, you may wish to change the current grid.

Selecting a grid system

All CC2 templates have a selection of pre-defined grids. To change the current grid setting, right click on the **Grid** button. (You can change the grid settings in the middle of another command without canceling that command.) You see the Select Grid System dialog box:
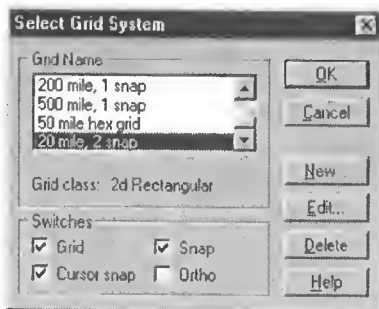
Each grid is named with the grid spacing (the spacing of the dots) and the snap frequency. **20 mile, 2 snap** has dots every 20 miles and snap points 10 miles (2 snap points per grid point).

Select a grid system by clicking on it in the list of grid names, then clicking **OK.**

The switches let you change the current button settings from the dialog *box*.

The buttons to the right of the dialog box let you edit grid systems and create your own.

Attach Mode

Although snap helps you connect things, you don't always want to draw on snap points. Modifiers such as **Endpoint** and **Midpoint** lock the next point to an exact point on an existing reference entity. Each time you want to place a modified point, you have to click a modifier icon first.. . until now.

At the bottom right of the drawing window is the **Attach** button. Click it to enable Attach Mode, right click it to change its settings:
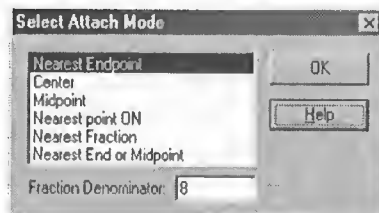
Placing points when Attach Mode is enabled is exactly the same as placing them normally except, if you click on an existing entity, the new point is precisely attached to that entity.

The only Attach Mode that is not also a modifier is **Nearest Fraction,** for which you type in a **Fractional Denominator** and CC2 will lock to that fraction along a selected entity. For example, type 5 and CC2 will lock to the nearest 20% along an entity.

Drawing a floorplan precisely

Even the smallest overland map template is set up to draw in terms of miles. Unless you're mapping the Taj Mahal, the first thing you must do is select a smaller scale template.

Templates for other map types are in subfolders of **Templates.**

1 > Click the **Template** icon and select **250'** x **200'.fct** from **CC2's   Templates\Dungeons** folder.
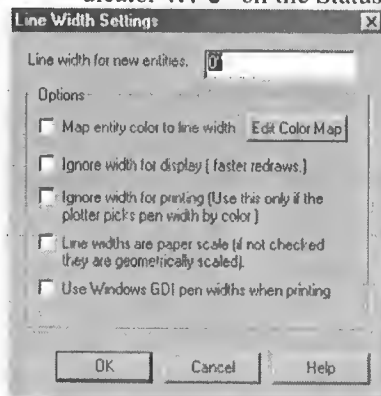
This template is based on Imperial units of feet and inches, The symbol ' is for feet and '' is for inches. One inch is approx. 25.4 mm. There are 12 inches in 1 foot.

Dungeon templates also have some custom bitmap till patterns for wood, water and other likely dungeon features,

2 ➢ Click New ⬛ to create a new map, based on the template.

3 ➢ Click the Line Width ,itrdicator W: 0″ on the Status Bar.

Line Width Settings ✕

Line width for new entities. ⬚0⬚

Options

☐ Map entity color to line width   Edit Color Map

☐ Ignore width for display (faster redraws.)

☐ Ignore width for printing (Use this only if the plotter picks pen width by color)

☐ Line widths are paper scale (if not checked they are geometrically scaled).

☐ Use Windows GDI pen widths when printing

OK   Cancel   Help

For normal mapping, all the options should be disabled. To read about their functions, click the **Help** button.

The setting that is important is **Line width for new entities.**

4 **> Set the Line with for new entities** to 1 then click **OK.**
The walls will have a real width of 1 foot.

5 > Click the **Path** icon ⧽.
The Command Line reads *1st point : .*

6 > Type 100, 100 then press Enter. *(Absolute co-ordinate)*
As you type, the numbers appear on the Command Line. When you press Enter the path is started at co-ordinate 100,100.

7 > Type @0, 30 then press Enter. *(Relative co-ordinate)*
The next path segment is drawn relative to the last position you used (could be the last position used by the previous command). In this case it is draw at (@)0 across and 30 up.

8 > Type @20, 0 then press Enter. *(Relative co-ordinate)*
The next path segment is drawn 20 across and 0 up. You should now have the beginning of an outline, exactly like this:
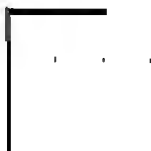
> `T: 75'-0",200'-0"`

The tracking indicator at the top of the screen shows you the current cursor position in terms of drawing units. Clicking the tracking indicator changes the tracking mode between

- *Absolute*. Coordinates are displayed as they are.

- *Relative*. Coordinates are prefixed with @ and are relative to the last point used.

- *Relative Angular*. Coordinates are prefixed with < and are angle and distance from the last point used.

- No display.
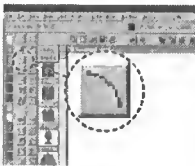
9 < Click the **Arc** icon.

Starting a new command cancels the last. The path ends and the arc begins. The Command Line reads `1st point : `.

10 < Slowly move the mouse.

The template on which the new map was based was saved with the **Snap, Grid** and **CsrSnap** buttons depressed, so that is their default.

> | Grid | Ortho | CsrSnap | Snap |

If you watch closely as you move the mouse, you can see the cursor jumps between snap points. However, the snap setting is very frequent and it is quite hard to select grid points.

11 > Right click on the **Grid** button.

You see the Select Grid System dialog box:

> **Select Grid System**
>
> Grid Name
> 10' grid, 2 snap
> 20' Hex grid
> 50' grid, 5 snap
> 5' grid, 5 snap
>
> Grid class: 2d Rectangular
>
> Switches
> ☑ Grid   ☑ Snap
> ☑ Cursor snap ☐ Ortho
>
> OK
> Cancel
> New...
> Edit...
> Delete
> Help
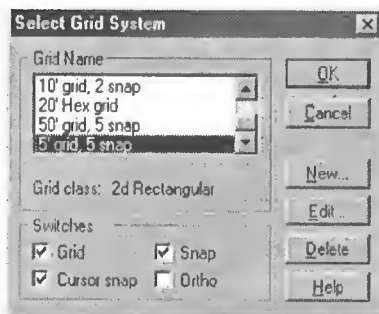
The current grid system is 5' grid, 5 snap. This means there are grid points shown every 5 feet and 5 snap points between them – so the snap points are every foot.

12 > Select 10 **grid, 2 snap** then click **OK.**

The grid changes. The new grid has snap points every 5 feet and grid points every 10 feet.

Now as you move the cursor around, its motion is much more jerky, and it is easier to select the grid points. Notice that changing the grid setting did not cancel the current command. You can change grid settings at any time.

13 > Click the arc's first point an at the last point of the path.

The grid is enabled, so you were able to pick exactly the same point again. No matter how far you zoom in, the arc and path will meet.

14 > Place the arc's second point 3 grid dots east of the first.

As well as typing coordinates, you can size objects exactly by counting grid points. This span will be 30 feet across.

The two endpoints of the arc have been placed. Now, as you move the cursor, you see how the arc will look when you place the last point.

15 > Make the arc a perfect semicircle by clicking as shown.
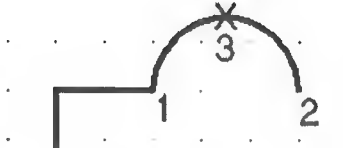
16 > Draw a **Path** which mirrors the first. Right click to end it.
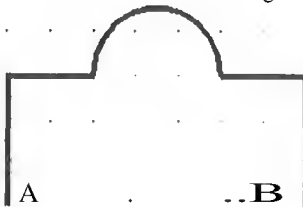
17 > Draw another **Path** and click its 1st point at point A (above).
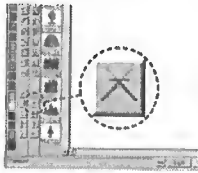
The Command Line reads *Next point : .*

18 > Type <25, 2 0 then press Enter. (Relative angular co-ordinate)

The line is drawn at an angle of 30" and a length of 20 feet.

19 > Right click to end the last path, then draw a new one, 1st point at B.

The Command Line reads *Next point : .*

20 > Type *<155,2*   0 then press Enter . (Relative angular co-ordinate)
The line is drawn at an angle of 150" and a length of 20 feet.
(Remember, 0° is east and 90" is north so 135" is northwest.)

21 < Click the **Fillet** icon.
The Command Line reads *1st   entity   to*
trim:.

22 < Select the 25" path.
The Command Lme reads 2nd *entity   to*
trim:.

23 9 Select the 155" path.
The two paths are trimmed to their intersection.

For the sake of practice, I want you to now select points using attach
mode instead of the grid.

24 > Disable **Grid, Snap** and **CsrSnap.**

25 > Click to enable the Attach button.

26 > Right click the **Attach** button and select the **Nearest Endpoint**
attach mode.
Any points you click over an existing entity will be modified to the
nearest endpoint of that entity.

27 > Start a **Path** ⊠ and, for its first point, click on the arc   near, but
not on, an endpoint.
The first point is attached to the nearest endpoint.

28 > Click near the end of the filleted join.
The next point is attached precisely to the endpoint of the join.

29 > Click near the other end of the arc, then right click to end the path.
You now have a building wall-plan like this:
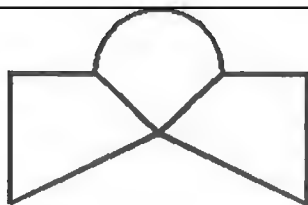
Unconventional, I know, but I like it.

Adding doors

1 > Click the Catalog button and select **Basic Dungeon Symbols.fsc** from CC2's **Symbols\Dungeons** folder.

The symbol catalog loads. It contains sufficient symbols to draw a simple dungeon. The Dungeon Designer 2 add-on contains fully colored symbols for every occasion.

2 > Scroll down the Catalog Window and pick the double doors from the bottom of the list.

The doors attach to the cursor.

3 > Place the doors in the middle of the arced wall.

To place the doors easily, right click on the **Grid** button and select a more frequent grid setting such as **5' grid, 5 snap.**

The door has a white background to overwrite walls. This also means that secret doors don't leave a tell-tale gap in a wall when you hide secrets.

(Optional) Instead of using **the** grid; you could enable **the Attach** button, with the Attach Mode set to **Nearest Point On.** This makes doors lock on to the walls when you insert them.

---

4 > Choose a single door from the catalog and press the ⬇ ⬜ ➡ and ⬅ arrow keys.

As you press each key, the door rotates:

⬅ and ⬜ makes the symbol align with horizontal walls.

⬇ and ⬆ makes the symbol align with vertical walls.

Use Ctrl Shift to rotate the symbol to align to other angles.

Other dungeon symbols

Add other dungeon symbols in the usual manner. Note that you will hardly ever have to change the symbol scale, as chairs, tables and doors tend to remain the same size.

Creating urban areas

CC2 also has mapping templates for basic city design, For better cities, use City Designer 2 which includes more than 1500 symbols and automated city building via the House Builder and Street Builder dialog boxes.

A town

1 > Select **File Menu > > Templates** and pick 1000' x **800'.fct** from **CC2's Templates\Cities** folder.

This is a blank drawing template for a medium sized village or small town.

Drawing Units

CC2 has a number of drawing unit options. These are available under **Options Menu >> Units**. You can have inches, feet, millimeters, meters or custom format. The tracking units can also vary, so you can track to the nearest millimeter, meter, etc. Units should be defined on templates, rather than after the drawing is started. If you use meters rather than feet, you should load up the city and dungeon templates and change the units and tracking to meters.

CC2's campaign scale maps are created at 1 inch = 1 mile. Urban areas and floorplans are created at true scale (1' in the drawing is 1' in real life.) So if you insert a dungeon into a map, it would be vastly bigger.

---

2 > There are no symbols built into this template other than those used for fill styles. Select the **Catalog** button and choose **Basic City Symbols.fsc** from the **Symbols\Cities** folder.

You can see a set of urban symbols.

3 > Select different   from the color bar.

You will notice that the building symbols change color.

This feature allows you to color code your buildings according to function (e.g. light blue buildings are residential). It is entirely optional. It can be combined with different layers.

City roads

Drawn using a 12' wide, solid filled line

Drawn using a 20' solid filled spline
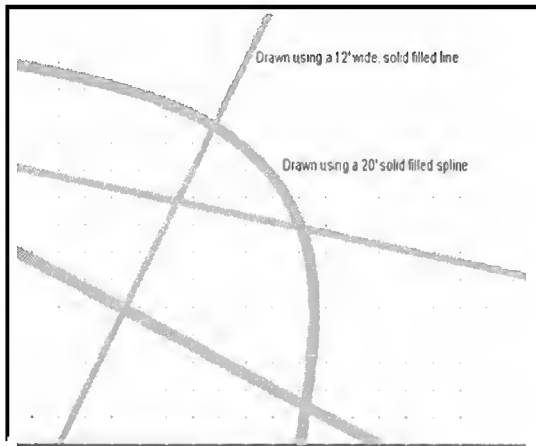
1 > Change the current drawing settings as follows:

✓	**Layer**	**Roads 1**
✓	**Line Width**	12'
✓	**Fill Style**	**Solid**
✓	**Color**	**Light gray**
✓	**Grid**	50' grid, 5 snap
✓	**Grid, Snap, CsrSnap**	Enabled

2 > Right click the **Attach** button and select the **Nearest point on** Attach Mode.

3 > Depress the **Attach** button to enable Attach Mode.
Whenever you click a point over another entity, the point will be adjusted by the attach mode to the nearest point of the line. If you select a point that is not over another entity, Attach does nothing.

4 > Draw the roads. You can change the width at any time by clicking the **Line Width** indicator.

✓   Use Line ▱ to draw straight roads.

✓   Use Path ⌐ to draw roads with corners.

✓   Use **Smooth Path** ⌐ to create curved roads.

> Don't let roads made from paths or smooth paths cross themselves - the fill styles becomes transparent where solid entities cross 'themselves. CC2 cannot calculate the intersections of self-intersecting entities.

5 > Always remember to turn Attach off when you've finished using it!

Buildings

1 > Select a house symbol from the Catalog Window then **Zoom Window** close to an angled road.

2 > Select a new current layer (say **Residents 1**) and select a current color for this type of dwelling.
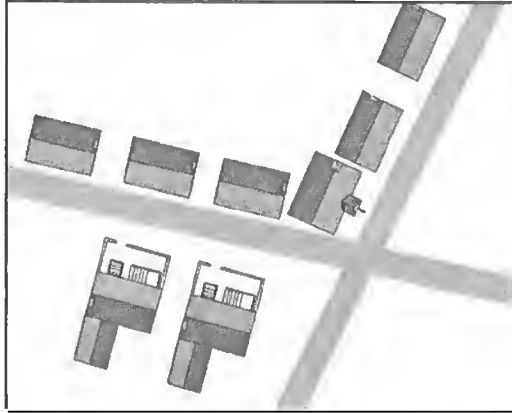
3 > Press ⌷Ctrl⌷ and ⌷Shift⌷ while moving the mouse to align the building with the road, then release the keys.

4 > Move the mouse slightly so that the building can re-establish itself at the cursor. Move the building into position along side the road and place the symbol.

> If roads are angled due north or east, you can use the arrow keys ⌷↓⌷ ⌷↑⌷ ⌷→⌷ and ⌷←⌷ to change the symbols angle.

5 > Choose another symbol. It is at the angle you chose last time (and thus parallel to the same road). Insert this symbol.

> You can easily rotate the building through 180° (parallel to the other side of the road) by right clicking and adding {or subtracting} 180° from the **Rotation** angle.

6 > Continue inserting symbols parallel to this road on this side. Change the color and layer as appropriate.

> It is possible to get the angle exactly right by using Info **Menu>> List** on a straight road and making a note of the BEARING. You can then type this value into the **Rotation angle** box when inserting city symbols.

With curved roads, **use Draw Menu >> Lines >> Perpendicular to** draw some lines attached to the curved road. Look at their bearing angle, and subtract 90° to get the correct angle.

Making a non-descript player's map of your city

If you've used color coding to show which building does what, you may not wish your players to know this, although you may want them to have a map of the city.
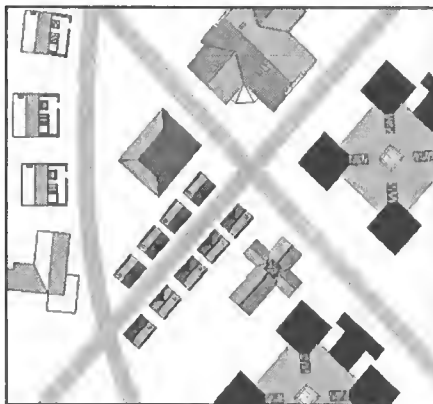
1 > Create a new layer called *PLAYERS*.

2 > Select **Copy Menu >> Copy to Layer** then select all the building symbols by **Type, Symbol Reference** and copy them to the new PLAYERS layer.

3 > Change Color ▦ by **Prior, Do it** and select a neutral color such as gray.

4 > Hide any layers you don't want the players to see before printing.

Extracting information

CC2's info menu can tell you useful information about your maps. You can find the distance along roads. You can find areas of landmasses and terrain. Using **List,** you can also get the details about any entity you select.

The most useful of these functions is Length Along. Use this to find the exact distance between locations on a road, then add the distance to the map using TEXT.

Freehand Sketching

As well as being able to draw with absolute precision, CC2 can also draw freehand. The **Freehand Sketch** icon lets you create naturalistic shapes, as if using a pencil.
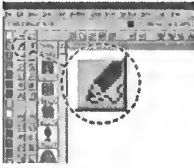
1 < Click the **Freehand Sketch** icon.
The Command Line reads `Start for freehand:`.

2 < Click anywhere in the drawing.
Now, as you move the mouse, you sketch a line.

3 > Press the ⌈Ctrl⌉ key while moving the mouse.
This is like lifting the pencil off the paper, and lets you select icons such as the zooms. To start drawing again, move the cursor back to the sketch, then release the ⌈Ctrl⌉ key.

Freehand Sketch creates a path **with** many short segments. **Options Menu >> Freehand Resolution** sets the number of screen pixels the cursor has to move across before CC2 adds another node.

If you want to use Freehand to make islands, draw a nearly closed shape then use **EDIT** to close it.

Colored contours

Our mountains so far have been drawn with symbols. CC2 can also represent height with contours, typical of a physical map in a modern day atlas.

To make the properties of your contours consistent throughout your maps, it is helpful and quick to work from a contour bar. There are pre-drawn contour bars in CC2's **Parts/Maps** folder, each drawn with the correct colors and layers. Once a contour bar is inserted, you can use **Keep** on it to quickly change drawing settings for each height.

Inserting a contour bar

1 > Open **Tutorial 2.fcw** from **Tutorials** folder.
This is the original tutorial map, before we got as far as adding mountains.

2 > Select Insert Menu >> Insert **Part** and select **Modern Physical.fcw**
   from **CC2's parts/maps/contours** folder, then click **OK.**

   You see the Insert Part dialog box. Pre-drawn parts are sized for a
   1000 x 800 map (which is what you are using). If you are working
   on another map size, you can change the scale factor here.
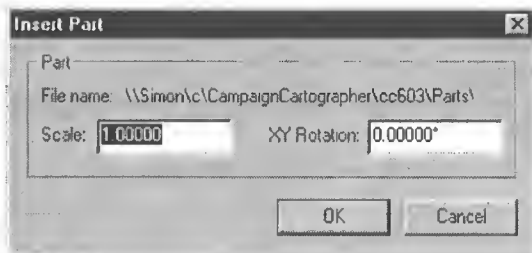
3 > Click the **OK** button.

   The Command Line reads *Insert at* . Enable the **Grid, Snap** and
   CsrSnap buttons, then click to place the contour bar at the bottom
   right corner of the map.
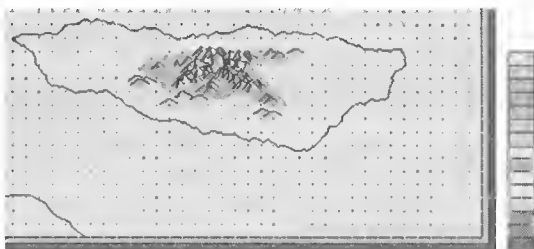
One of CC2's preferences, controllable via Options Menu >>
Preferences is Group parts on insertion. By default, this is off.

If Group parts is on, inserted files (including those from the
clipboard) are *grouped* - which means they are treated by CC2 as a
single entity. If you select any member of the group, the whole group
is selected. This suits parts that you won't want to edit, such as
decorative compass roses.

If you plan to select or edit individual entities within the part (as with
our contour bar), you do not want the part to be grouped. Before
inserting the part, disable Group parts on insertion.

You can temporarily ignore / disable groups by depressing the
Locked button, which will then read Unlocked.

4 > Right click to stop inserting parts, then **Zoom Extents** 🔍.

5 > Click the **Keep** icon 📋 and select a side edge of the lightest brown box in the contour bar. (You must click the side edge, or you don't know which of the two adjacent colored boxes you are selecting.) CC2 changed the current drawing settings to match the properties of the box you selected.

P 0.000 mm   W: 0.00000   L RELIEF/CONTOURS   LS: Contour   FS: Solid

The current settings are now **fill** style **Solid**, line style **Contour**, layer **RELIEF/CONTOURS** and color **lightest brown.**

The contour bar consists of colored boxes, each with a black outline.

Question: How does CC2 know to take the properties of the colored box, instead of the black line?

Answer: When you use Keep and click on the side of a box, CC2 scans through the drawing database for the first entity at that location. This is the colored box. The black line is drawn on top of the box, which means it comes after the box in the database.

6 > Zoom Window on the island and use **Smooth Poly** 🔄 to draw the first contour. When the shape is almost complete, right click to close it and end the command.
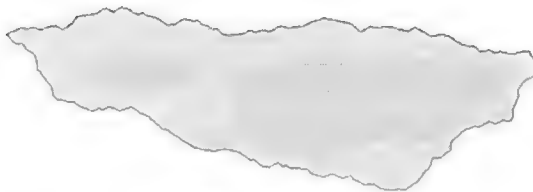
7 > Click the **Zoom Last** icon 🔍.
The last view we used, which includes the contour bar, is restored.

8 > Use **Keep** 📋 on the next highest contour in the contour bar.
The drawing settings and color are changed for the next contour.

9 > Click the **Zoom Last** icon 🔍 again.
The close up view of the island is restored. Switching between two views is a very typical use of **Zoom Last.**

> To make it easier to select colors, you could add a new drawing window using **View Menu, >>, Windows >> New Window.** Create a contour bar-shaped window, zoom to the contour bar, then left click on the main windows title bar to make it the active window. Then, wherever you zoom on the main map, you'll still see the contour bar.

10> Use **Smooth Poly** to draw the next highest contour.

11> Repeat until your land is as high as you want it.

12> Change the current color to **gray,** then select **Draw Menu >> Outlines** > > In **Current Color.** Select all the contours to give them each a dashed border.
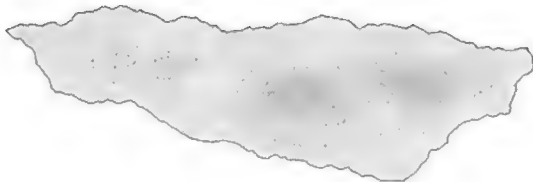
Ocean contours

Of course, sea depth changes just as much as land height. Adding contours below sea level is just the same as adding them above.

---

1 **>** Open **Contours (land).fcw** from CC2's **Tutorials** folder.

You see my finished version of the island with contours.

2 **>** Use **Keep** 🔲 to and select the blue box 4th up from the bottom of the contour bar.

CC2 changes the current drawing settings to match the box. The line style is **Contour.**

3 **>** Click the Line Style indicator on the Status Bar and change the current line style to **Solid.**

Contour is a dashed line style. Since the background and current drawing color are very similar, a dashed line would be hard to see and work with. The solid line style will stand out,

4 **>** Enable the **Grid, Snap** and **CsrSnap** buttons.

The ocean contours will be made of smooth paths multipolied with straight paths at the edge of the map. To make it easy to make precise joins, we will draw using the grid. With a smooth line, it won't show that all the points are on a regular grid,

5 **>** Use **Smooth Path** 🔲 to draw a deep water contour that starts at the east edge of the map, goes around the island, and ends on the south edge of the map.

The 1st deep water contour
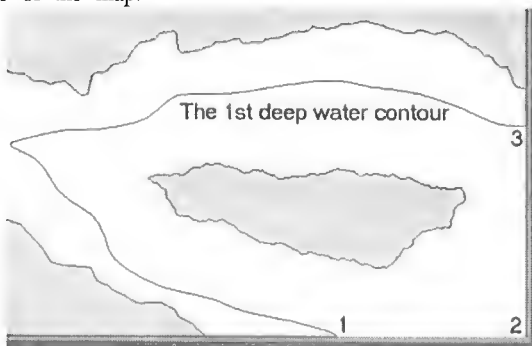
6 ➤ Use **Smooth Poly** 🔲 to draw another deep water contour, loosely following the island.

When the smooth polygon is complete, it will display in front of the island. Don't worry about that · it will sort itself out in a moment.


The 2nd contour

3

1   2
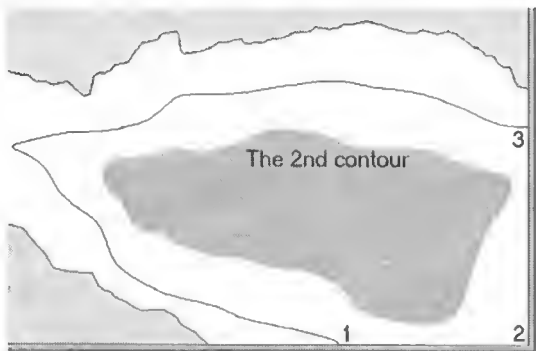
7 > Use **Path** 🔲 to draw the closing segment of the first contour between points 1,2 and 3 (above).

Because the Grid and Snap are enabled, this path perfectly meets the smooth path.

8 > Use **Multipoly** 🔲, selecting by Prior to get the straight path, then by clicking on the smooth path and smooth polygon.

The three shapes are combined as a polygon, giving a deepwater channel between the island and mainland.

9 > **Front** 🔲 the BORDER layer to clean up the map.
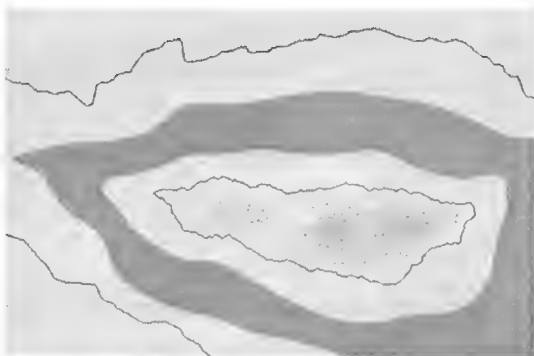
Be more selective

Whenever you use an edit or copy command, CC2 needs you to select the
entities to use. The number of entities that CC2 expects varies according
to the command you are using but, by watching the Command Line, you
can see what your options are. For example:

✓ **Edit** only affects one entity at a time. The Command Line reads
Select entity: and you have no option except to click on an
entity. If your click misses, the command will end.

✓| **Fillet** trims two entities to their intersection. The Command Line
reads *1st entity:* then *2nd entity:.* At each prompt you have
no option except to click on each an entity. If your click misses,
the command will end.

✓ **Copy** will copy any number of entities. The Command Line reads
Select entities (0 picked) : . This tells you that you can select
more than one entity, which means you can be selective!

  • Click on an entity's edge to select it.

  . If you don't click an entity's edge, you will start selecting by
window. All entities inside or touched by the window will be
selected.

  • Press ☐Ctrl while selecting to remove entities,

  . or right click to bring up the Selection popup menu:

The Selection popup   menu
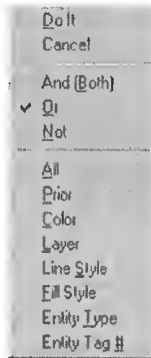
A|l selects all entities in the map, except those with frozen layers.

P|rior selects the entities you have just drawn or edited. The prior entities
are forgotten as soon as you may another selection so this option is only
available the when you first see the selection cursor.

Color, Layer, **Line** Style and Fill Style select all entities with the property you specify. After clicking one of these you can type the value or right click to select it from the relevant dialog box.

Entity Type lets you select entities by their type. After clicking this you see a dialog box in which you place ticks next to the entity types you want to select. (The ticks from your previous selection will be remembered, so you may need to deselect them.)

Tag #. If you use Info **Menu** >> **List** on an entity, one of the details CC2 lists is the entity's unique Tag #. You can type this number to select a particular entity again and again.

Combining selections with logic

You can use **Or, And** and **Not** to logically combine selection criteria.

Combining selections using:	Has the following logical effect:
Or (the default)	Entities that meet any of the criteria are selected. For example, select "Color Red OR Type Text" selects entities that are "red or text".
And Both	Entities that meet all the criteria are selected. For example, selecting "Color Red AND Type Text" selects entities that are "red and text".
Not	Entities that meet the criteria are **deselected.** For example, select "Color Red NOT Type Text" selects entities that are "red but not text".

CC2 will let you carry on adding and removing entities from the selection until the world ends, or England win the Ashes*, whichever comes first. CC2 will only complete the command when you click DO ft.

---

* That's one for my mates over in Oz. On 29 August 1882 Australia won a cricket match against England. It was the first time England had lost on home soil, and was reported as the death of English cricket, which was then cremated. Ever since, the two nations have played cricket for the urn containing The Ashes. Recently, Australia has been doing rather well.

Selective selections in action

1 > Open **Tutorial 16.fcw** from CC2's **Tutorials** folder.

We will change the line style of the solid navigation lines in the map. We could easily pick the lines by clicking on them but, for the sake of learning, we'll select them their properties instead.

The navigation lines were drawn on the NAVIGATION LINES layer.
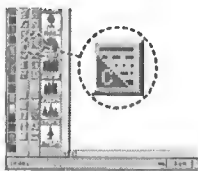
2 < Click the **Change Line Style** icon.

The Command Line reads *Select entities:*.

3 < Press ⬛ or right click and pick **Layer.**

The Command Line reads *Layer name [dialog]:*.

4 > Click **Like** and select one of the solid navlines.

Using **Like,** CC2 gets the layer name from the entity you select. Everything on the NAVIGATION LINES layer is selected. The Command Line reads **Select entities (32 picked):.**

5 > Press ⬛ or right click and pick **And (Both).**

The Command Line still reads **Select entities (32 picked):.**

6 > Right click to bring up the Selection popup menu.

The **And (Both)** option is now ticked. Future selections will be **anded** with the existing selection,
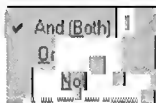
7 > Press ⒮ or pick **Line Style.**

The Command Line reads Line style name [dialog]:.

8 > Click **Like** and select one of the solid navlines.

Using **Like,** CC2 gets the line style from the entity you select.

Now everything that is both on the NAVIGATION LINES layer and has Solid line style is selected. The lines with a dashed style are dropped from the selection.

9 > Press ⬜   or right click and *DO* It. Complete the command as normal, selecting a new line style for the selected lines from the dialog box.

Another example: overlapping entities

The inside edge of a map border has at least four overlapping entities:

- There is the blue box of the sea or grass background,

- the brown polygon of the border,

- the black outline to the border,

- and underneath the lot, a green line which, right at the back of the drawing, lets you **Trim to Entity** to the edge of the map.

If you wanted **to** change the color of the black outline from black to blue (I don't know why, let's just say you do.. .), you couldn't select it with a click alone, as this would pick all four entities under the click. Instead, you have to make use of a difference between the properties of the four entities. In this case, the outline is the only one of the four which is black.

1 > Click **Change Color** 🖼 then pick the map border at a place where there's no land to further complicate the selection.
   The Command Line reads *Select entities (4 plcked):.*

2 > Press ⬜   ⬜ ⌞0⌟⌞Enter⌟⌞0⌟⌞
   The entities that you clicked on and are also color 0 (black) are selected.

3 > Complete the command as normal.

If two entities are overlapped and *completely* identical, you can't use their properties to pick them apart. There is, however, a trick you can use:

Edit Properties 🖼 only affects a single entity. If you use Edit Properties and click over two overlapping entities, it takes the first entity under the click as the one to work on and shows you the dialog box. If you then click OK without making any changes, then entity is the last entity you selected, and can be picked again with Prior.

Cropping to the map border

When you copy a section of one map into another, the copy often needs cropping to the new map's border. This illustration shows a landmass that has been copied down from a larger map. The coast and rivers need cropping.

Cropping the land

The land is a polygon. You could edit it using Insert **Node, Delete Node** and **Node Edit:** but, for this many nodes, doing them one by one is not very efficient.

Polygons and paths are very closely related. In fact, a polygon is simply a closed path. Knowing this, you can easily put CC2's trim commands to use on polygons.

If you make errors following this example, use **Undo** to fix them.

4 > Open **Continent map.fcw** from the **Tutorials** folder.
> The continent has been pasted in from a world-scale map. The land needs cropping to the map border, but the first thing to do is get rid of the black coast outline. We want to edit one entity, not two!

5 > Erase the coast outline, selecting it by clicking its edge (which gets the green coast as well) ⋈ **And (Both)** ⋈ Color ⋈ 0 (black) ⋈ Do It.
> You are left with only the green landmass to edit. Now to convert it to a path...
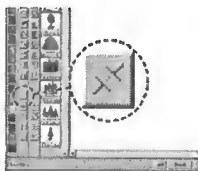
6 < Click the **Break** icon,

> The Command Line reads *Entity to break:*.

7 < Click the land on the part that you want to keep.

> The Command Line reads *Break starts at point:*.

Break start point X

Break end point X

Select the coast X
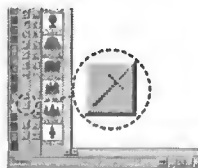on the part that
you want to keep
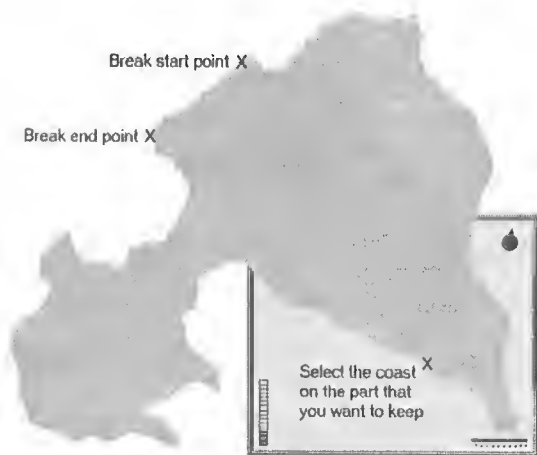
8 > Click the start and end points as shown.

The land is broken, becoming a light green path. CC2 knew which section to keep from where you clicked to select the land.

Before trimming the path to the border, let's change its color to one that's easy to see against the blue.

9 > Change Color , selecting by **Prior** then **Do** It, to black.

10< Click the **Trim** icon.

> The Command Line reads *Entity to trim:,*

11 <Click the land path on the part that you want to keep.

> The Command Line reads *Trim to point [pick point]:*.

12 > Use the **Intersection** modifier to pick the trim point:

> Click **Intersection** .

> The Command Line reads *Intersection or 1st entity:*.

> For the 1st entity, click on the coastline.
The Command Line reads `2nd entity:`.

> Click the inside edge of the north map border.
The path is trimmed to its intersection with the border.

CC2 can usually find the intersection you want from a single click over it, which is why the first Command Line is `Intersection or 1st entity:`.

However, in some cases the site of the intersection can be confused by other entities in the same place, so you have to explicitly pick the ones that intersect. This is the case with this intersection.

If you click on top of the intersection, the first entity CC2 finds is the brown border polygon and the second is the black internal edge of the border. These entities are parallel so CC2 fails to find an intersection.

13 **>Trim** ✕ the coastline to where it crosses the west border.
As before, to select the intersection explicitly pick the coastline, then the border (doing it the other way round doesn't work, because the first click is over two entities).

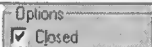The coastline is now cropped to the border.

14> **Fractalize** 🔀 the coastline to add detail.
I suggest a **Depth** of 3 and **Strength** of 30.

15> Click the **Edit** icon EDIT, and select the coastline.
You see the Edit dialog box. The Edit dialog box varies depending on what entity type you are editing.

Edit 2D Path   ✕

Nodes   Smoothing
0: 0.00027,1241.439   No Smoothing ▼   OK
1: 5.91142,1234.607   Cancel
2: 14.73232,1229.708
3: 16.36652,1223.294   Style ..
4: 22.04739,1213.981   Options
5: 32.93249,1208.067   ☐ Closed   Help
6: 44.52487,1193.198   ☐ Start Arrow
7: 54.32310,1189.290   ☐ End Arrow
8: 67.37390,1183.098
9: 74.70291,1170.357   Trim Parameters
10: 89.93382,1158.74   Start   0.00000

0:    0.00027,1241.439   End   280.00000
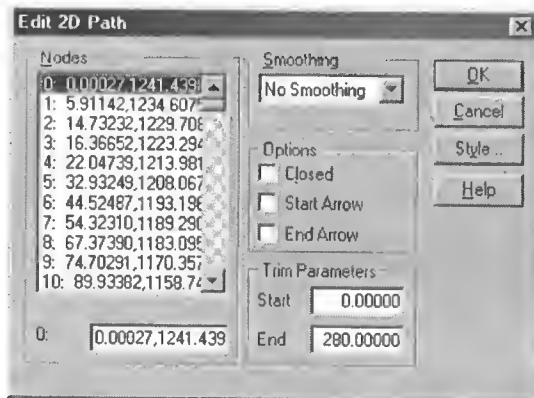
16 ⟩ Click to enable the **Closed** setting [☐ Options ☑ Closed] then click OK.
The path is now closed, making it a polygon and allowing its solid fill style to apply. Now we need to add a node in the corner.
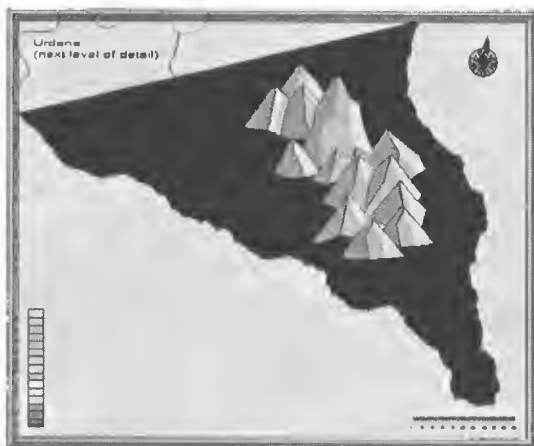
17 ⟩ Use Insert **Node** 🖽 to add a corner node in the straight edge. Use the **Endpoint** modifier to locate the new node in the map corner.
The coastline has been cropped to the border.

18⟩ **Change Color** 🖽 selecting by **Prior** then **Do It,** to color 110.

19⟩ Use **Outline in Black** 🖊 to draw the black coastline.

Cropping the rivers and roads

XThis example only has rivers. If you had roads, you would treat them in exactly the same way.

It is debatable whether it is better to draw over the existing rivers and roads with greater detail, or to crop the existing ones and edit them to add detail.

For the sake of practice, we'll crop the existing rivers.

Continued from previous example.. .

20 ⟩ Use **Trim** 🖊 on the river running high to the north.
Use the Intersection modifier for precision, remembering to pick the river first, then the border.

21 ⟩ Repeat **Trim** on the river end at the west of the map,

22 > Use **Break** [×] to crop each river bend outside the border.
For each bend, select the `Entity to break` on the part you want to keep. As you break the river, each section becomes a separate entity, so you'll have to select the next entity further along.
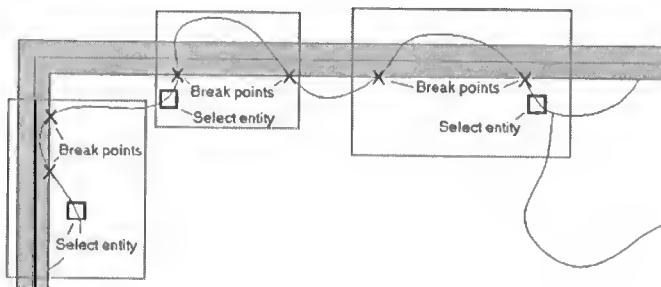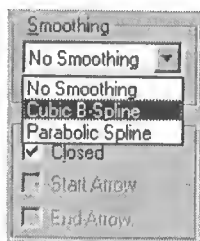

Smooth coastlines at the border

The problem is how to create a coastline that is smooth and curvy inside the map, but straight as an arrow at the map border.

Converting between straight and smooth coastlines

1 > Open **Continent map.fcw** from the **Tutorials** folder.

2 > **Erase** the black coast outline, selecting by clicking its edge then **>And Both** > **Color** > 0 (black) ⋈ **Do** It.
The black coastline is erased.

3 > Click **Edit** and select the green landmass.
You see the Edit dialog box, showing the options for editing polygons.

4 < From the list of **Smoothing** options, select **Cubic B-Spline** then click **OK.**
The landmass is now drawn smoothed.

5 > Use **Break** [×] and **Trim** [/] to crop the smooth coastline to the border, exactly as in the previous example.

6 > Draw a **Path** ⩗ for the two straight sides of the land.

> Use the **Endpoint** modifier to locate the endpoints precisely.

7 > Check the current drawing settings are ready for drawing land:

> ☑ **Layer** COAST / SEA
> ☑ **Color** Light green (#llO)
> ✓ **Fill Style** SOLID

> The easiest way to do this is click the **Landmass** icon. Don't worry that this starts drawing a polygon, starting another command will override it.

8 > **Multipoly** 🔘 the straight and curvy path together.

> To select the entities use **Prior** (which gets the path, even though it is in the same place as the border) then click on the coastline.

> The multipoly is created using the current drawing settings.

> (This technique is exactly the same as what you did in the **Colored backgrounds for cropped mountains** example, earlier in this nook.)

9 > Use **Outline in black** 🖼 on the land mass.

10 > **Front** 🗂 the BORDER layer.

> The cropped smooth coastline is done.
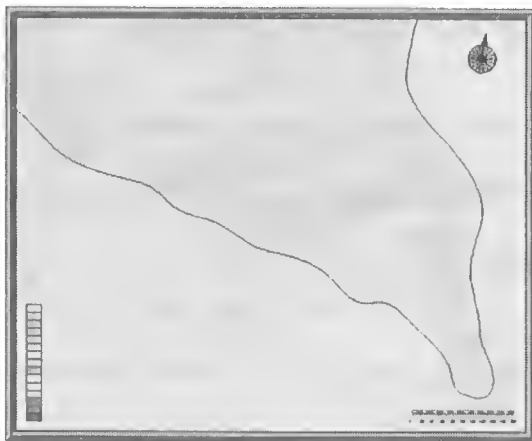
The **Babapapa** landmass.
you are old and decrepit, like me,
you may get this joke. If not, sorry.

More on Multipolies

Our multipolies to date have been very simple; a smooth path joined to a straight path in order to create the corner of a curvy region.

Multipolies can actually combine many and various entities to create very complex shapes, even including cutouts.

More complex multipoly shapes

1 > Open **Multipoly.fcw** from CC2's **Tutorials** folder.

You see an outline that I drew using many entities and entity types. I have been very multicolored to help you see each entity.

The resultant shape is certainly complex. Perhaps Mr. Rorschach would call it Dazed Clown.

2 > Click **Multipoly** , select all the entities, then *DO* It.

The entities are combined as a single shape. The multipoly gets its properties from the current drawing settings (flesh color, solid fill, Coast/Sea till, etc.), not any of its member entities.

The circle, ellipse and smooth polygon in the middle are treated as cutouts.

130

Editing multipolies

If you try an edit command, such as **Edit** EDIT on the multipoly, you will find it doesn't work. In order to edit a multiphy, you first have to **Explode** it. Bang.

Continued from the previous example.. .

3 > Click **Edit** EDIT and select the multipoly.
> The command stops and nothing happens. A multipoly can not be edited.

4 > Click **Explode** , select the multipoly then Do It.
> The multipoly reverts to its original entities. Each entity remembers its original color, layer, etc.

5 > Now try the **Edit** again.
> This time it works. Make any changes you want, then redo the multipoly.

Multipoly text

As if the Dazed Clown isn't enough, how about this:

---

1 > **Use Text** A to add a line of text such as *Not bad, eh?*.
> Make the text any size, font, style and color that you like.

2 > Select **Text Menu >> Explode Text** then select the baseline of your text and Do It.
> There is no visible difference to the text, but it has now been converted from font to a multipoly.

3 > Click **Explode** select the multipoly text then Do It.
> The multipoly text is exploded into its constituent entities. It can now be edited like any other entity.

Multipoly text, exploded so it can be edited, then
put in the hands of CC2 operated by a lunatic.

Why use multipoly text

Unlike CC2's other entity types, True Type (TT) fonts are not infinitely scaleable. Due to the way TT fonts are defined, they can only display and print in whole point **sizes** (a way of measuring text height), and this causes a small problem.

Imagine text in a title box. At one level of zoom CC2 needs a point size of 7 to display the text. 7 is a whole size, so the font obliges.

Now imagine zooming in by a factor of 1.5. CC2 can scale the title box by 1.5, no problem. The text, however, needs to be 1.5 x 7 = 10.5 points. Unfortunately, the font can't do this – it can only do 10 or 11.

CC2 uses the closest available size but, since the text and the box have scaled by different amounts, their relative proportions change.

Text in a title box

The same text, Zoomed In by 1.5

Text in a title box

In the illustration, the gap between the ends of the text and the box change. This is because the font couldn't precisely reproduce the change in zoom.

Exploding text into multipolies means that the TT font is replaced by native CC2 entities, which allow near infinite zoom. It also lets you alter the text design, to create logos and the like. The down side of multipoly text is that drawing size increases, and the text can no longer be found by text searching.

Linking files and maps together

Maps can contain any number of hotspots which, when clicked on, perform an action such as opening another tile. There is no limit to how many hotspots a map can have, nor to what types of tile you can link – so long as a tile type is recognized by Windows@, CC2 can open it.

As your campaign Atlas grows, link each map with its neighbors and any larger or smaller scale maps of the same area. This way you can navigate your entire world without ever having to remember a file name.

Links are invisible, so it is helpful to somehow mark where they are. You can use a convention such as a red dot on cities that are linked, a different font or capitalization, or mark the location with a symbol. The **Links** symbol catalog in CC2's **Symbols\Other** folder contains a suitable selection.

Linking maps to other maps

1 > **Open** 📂 **World scale.fcw** from CC2's **Tutorial** folder.
   You see an early map of a new campaign world.

2 > Select **Info Menu >> Link with Map.**
   You see the Select File dialog box.

3 > Select **Continent smoothed.fcw** from the **Tutorial** folder, then click **OK.**
   The Command Line reads *Hotspot window:*.

4 > Click opposite corners of a window around the southeast corner of the northern continent.
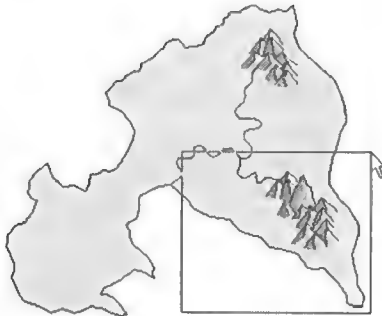
   The hotspot window is drawn. Under the window is the hotspot command `text LOADM $continent smoothed.FCW;`

   The window and command text are visible because when you add a hotspot all hotspots are shown (at the next redraw), so they can be edited.

5 > Select Info **Menu >> Hide Hotspots.**

> The hotspots are hidden.

6 > Move the cursor over the hotspot area.

> When the cursor is over the area it becomes a pointing finger.

7 > Click over the hotspot area.

> CC2 is about to load another map, so it asks if you want to save the changes. I suggest you do.

> The new map loads. You can now get to this map from the other, simply by clicking over the hotspot.

Linking maps to other Windows@ documents

Contintued from   previous tutorial.. .

1 > Reload **Continent smoothed.fcw.**

2 > Select Info Menu >> Link with File.

> You see the Select File dialog box allowing you to pick the file from anywhere on your system.

3 > Select **Urdana.txt** from CC2's **Tutorial** folder.

> The Command Line reads `Hotspot  window:`.

4 > Click opposite corners of a window around the map title.

5 > Select **Info Menu >> Hide Hotspots.**

> The hotspots are hidden.

6 > Move the cursor over the new hotspot area and click.

> The text file opens. This tile could just have easily been a spreadsheet, word-processor document, Internet html document, sound tile or any other registered file type.

> If the Windows can not view the file type, clicking the hotspot will have no action. If you want to learn how to associate a program with a file type see **"associating file types with programs"** in the Windows help index.

Other types of hotspot

What a hotspot does is defined by the command text you see below the hotspot window. When you add a link to another file, CC2 creates the hotspot text automatically. To perform other actions you need to use **Info Menu > > Make Hotspot** and create the command text yourself.

In brief, the hotspot text is exactly what you would type at the Command Line to achieve the result you want. For example, if you typed **NOTES** ; in the Hotspot box, the hotspot would show the MAP NOTES dialog box.

Creating hotspot macros is a hefty subject, covered extensively at www.profantasy.com and in CC2's help tile. Look up **Macro** in CC2's Help index.

Editing hotspot links

1 > Select **Info Menu >> Show hotspots.**
>   This lets you see the hotspots so you can edit them.

2 > Click the **Edit** icon and select the edge of a hotspot window.
>   You see the Edit dialog box containing the command text that the hotspot executes.

3 > Change the text as required.
>   To make links portable between different computers, which may have CC2 installed in different folders, link text can include the following special characters:

> #   means the folder where CC2 is installed.
> $ means the folder where the current map is located.

The command text LOADM $continent smoothed.FCW; means

LOADM	= CC2 text equivalent of Load map
$	= The same folder as the current map
Continent smoothed.fcw	= The file to load.

BITMAPS, SCANS & EXPORTS

Using bitmaps or scans in drawings

CC2 maps can include bitmap images, such as scans, clipart or pictures downloaded from the web. The image can either be permanent fixtures in the drawing or, more likely, a temporary entity to trace over.

Inserting a bitmap picture

In this example, we will insert a hand drawn painted image of some mountains to be traced over and converted to a symbol. Before inserting the bitmap, we will select an overland mapping template and insert a mountain symbol so we can correctly size the inserted bitmap.

1 > If the original image is not a Windows ,BMP bitmap, open it in a paint program such as Jasc's Paint Shop Pro and, using Save As, convert it to Windows .BMP format.

> If you don't already have a paint program (sometimes called a photo editor), shareware versions are often included on the cover disc of PC magazines. Alternatively, you can download shareware software from the web. For Paint Shop Pro go to www.jasc.com.

2 > **Use Template** to select a 1000 x 800 mile template from CC2's **Templates\Maps** folder.

3 > Click New to start a fresh map.

4 > **Save** the map.

If you don't, the picture won't display until the map is reloaded.

5 > Click the **Mountains** shortcut icon and insert two or three mountain symbols in the map.
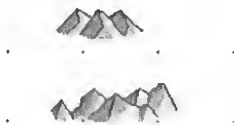
6 > Select **Insert Menu** >> Insert **picture.**

You see a dialog box allowing you to select the picture.

7 > Select **Mountains.bmp** from **CC2's tutorial** folder.

You see the Picture Options dialog box:
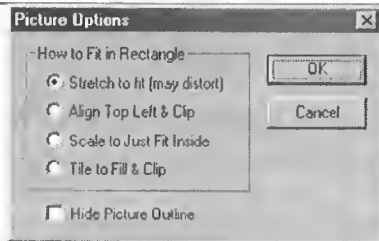
8 > Select Scale to Just **Fit Inside,** then click **OK.**
The Command Line reads 1st **corner** : .

9 > Place opposite corners of a box, nearly the same size as the symbol mountain range. Disable **Snap** to place the corners freely.
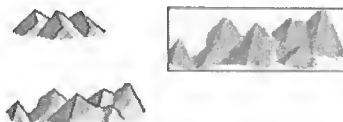
10 > The picture size will probably be slightly wrong. Use **Move** [icon] on the **Prior** selection to let you visually resize the picture. Just press [Ctrl] while moving the mouse.

1 1 > You can now zoom in and trace over the scanned mountains.

Tracing over a scanned map

Before inserting the scanned map you need to decide or know the real world dimensions of the scanned area and select an appropriate template.

Earth, for example has an equatorial circumference of approximately 25,000 miles. To insert a scanned worldview of Earth you must therefore start with a map measuring at least 25,000 miles east-west.

The example bitmap we will use was taken from the beta version of Fractal Terrains – a future release from ProFantasy, capable of building complete, fractally generated landmasses. For argument sake, I am saying the circumference of the random world is 9,830 miles. A small but dense planet.

1 > Click **Template** and select 10000 x **8000.fct** from CC2's **Templates\Maps** folder.
This template is large enough to fit the whole random world.

2 > Start a new map and save it with the name Random.
    You see a new map to draw on. It measures 10,000 miles across.

3 > Click the Layer indicator, add a new layer BITMAP and make it the current   layer.

4 > Select Insert **Menu** > > Insert **Picture** and select **Random.bmp**
    from CC2's **Tutorial** folder.
    You see the Picture Options dialog box.

5 > Select **Scale to Just Fit Inside,** then click **OK.**
    The Command Line reads 1st corner:.

6 > Type 0,0 then press ⌨.
    The Command Line reads Opposite corner : ,

> At the time of writing there **is** a bug which we can not find and the inserted map may not display at first. To work around this, save the drawing, close CC2 and then **restart** it. The same map will reload, now with bitmap scan and all. Sorry, but hey, at least we're honest!

7 > Type 9830,6000 then press ⌨.
    The bitmap image of the planet is inserted.

    The **Scale to just fit inside** option scales the image so it tits entirely within the box, without clipping. The image keeps its original height to width ration.

    In this case, we set a maximum size of 9830 across and 6000 up. The 6000 was deliberately large to make sure that the limiting dimension would be the width of 9830. The inserted map therefore measures 9830 miles across.

> The source bitmap is 1150 x 566 pixels, A little calculation reveals that if 1150 scales **up** to 9830 then 566 scales up to 4838. There is, however, no need to work this out. Just allow plenty of size for the dimension you are not worried about.

8 > You can now trace over the map as normal. When you're done, either hide or delete the BITMAP layer.

Exporting maps from CC2

CC2 can also export pictures in a variety of formats. The most popular is as a bitmap, which can be pasted into documents or published on the web. You can also save maps in DXF and DWG vector files, although these file formats do not support all CC2 entity types.

Save As...

The **Save as type** list on the Save As dialog box lets you save the whole map in a number of file formats:

✓ **.FCW** is CC2's standard file format. FCW files contain information such as fill styles, line styles, layers, views and symbol definitions.

✓ **.FCT** is the same as an FCW file except you can only use SAVE AS to create an FCT (template) file. The current template file is the one that appears when you select a new drawing. If you want to add new till styles and line styles to your drawings, it is best to add them to templates.

✓ **.FSC** files are symbol catalog files. They contain only symbol definitions. It is these files you select from when you choose which symbols to insert into a drawing. By convention, these are given a forest green (color 13) background and saved with the main window minimized.

✓ **.DXF** files are the standard way of exchanging vector information. CC2 can export or import these files up to version 14. The options for this file type can be found **under Options > DWG/DXF Options.**

✓ .DWG files are AutoCAD's native file format. Version 14 is supported. The options for this file type can be found under **File Menu >> Conversion >> DWG/DXF Options.**

✓ **.EMF** is a Windows enhanced metafile

✓ **.BMP** is a Windows bitmap file. Bitmap files are measured in pixels across and up. Set the size and color depth of bitmap files created by CC2 using **Edit Menu > > Clipboard > > Options.**
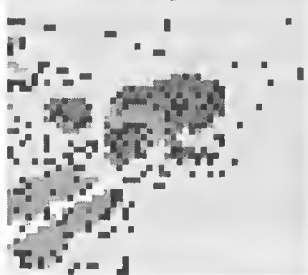
Saving whole maps as bitmaps for the Internet

Internet browsers recognize GIF and JPG files formats. To end up with one of these, you must convert CC2's BMP output with a paint program. But first, you must decide the size of image you want. The size of bitmap that CC2's creates is set from **Edit Menu >> Clipboard >> Options.**

A picture 600 x 400 pixels on the Internet would be considered large. However, a useful technique to give very good image quality is to create images at greater than the desired size, then use a paint program to resample it (reduce its size). The resample process smoothes out rough edges, giving a very clean image and fine detail.

⊕ AutoCAD is a registered trademark of Autodesk, Inc.

Resample and resize are two different methods for changing an image's size. Good paint programs, such as Paint Shop Pro, have separate tools for each method, and the results are very different,

The difference between Resize and Resample:

Resized to half size the paint program simply misses out every 2nd pixel. Much of the detail is now missing.	Resampled to half size, the paint program blends between the kept and missed pixel, giving a superior image,

1 > Select **Edit Menu >> Clipboard >> Options.**

You see the Clipboard Specifications dialog box:
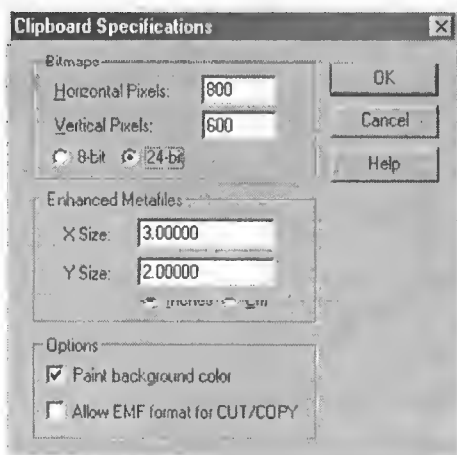
The options for bitmaps are **Horizontal Pixels** and **Vertical Pixels,** which set their size, and **8-bit** or **24-bit** which sets their color depth (8 bit = 256 colors, 24-bit = 16 million colors).

Paint Shop Pro is a trademark of Jasc, Inc.

2 > Select the size and color options you want, then click **OK.**

3 > Select **File Menu >> Save As.**

4 > Select **BMP Bitmap File** from the **Save as type** list box.

5 > Select a suitable directory and name, select OK.
> The bitmap is saved with the size and color options you chose.
> Those options remain default until you change them.

6 > Open the same bitmap in a paint program, make any changes to size, color depth or image cropping, then use Save As to save it as a type supported on the Internet, such as GIF or JPG.
> In Paint Shop Pro you can get even better results by sharpening the resampled image.

Saving parts of maps with the clipboard

To save part of a map, rather than the whole shebang, you can use the clipboard.

CC2 stores clipboard information in three formats. When you paste the information, the application you are pasting into will choose the format it understands. For example, if you paste into another CC2 map, it will paste as normal CC2 entities; if you paste into Microsoft Paint, it will appear as a bitmap.

1 > Press `Ctrl` `C`. Select the entities you want to appear in the image.
> Remember, frozen entities will not be selected.

2 > Open the application you want to paste the bitmap into. Press `Ctrl` `V` (or select Paste from the application's Edit menu).
> If the application supports bitmaps, you will see the entities you selected. The resolution is the bitmap is set from **Edit Menu > > Clipboard >> Options.**

> It is likely that you will need to crop the image.

SYMBOLS

CC2's symbols are divided by type into catalogs (with a .FSC file type)
and stored in CC2's **Symbols** folder with a descriptive name. You can
load the most frequently used catalogs, such as **Vegetation, Mountains**
and **Structures,** by clicking their shortcut icon. To load the other
catalogs, such as **Modern Mapping.FSC** and **Geometry.FSC,** click the
Catalog button and select them from the relevant folder.

In addition to CC2's pre-drawn symbols, there are vast symbol libraries
included with Dungeon Designer 2 and City Designer 2, and free libraries
downloadable from www.profantasy.com. But if you still can't find the
symbol you want, you can create your own. Anything drawn in CC2 can
be converted into a symbol.

What happens when you use a symbol

The first time you select a particular symbol from the Catalog Window,
CC2 invisibly adds its symbol definition to the map. Thereafter, whenever
you place the same symbol, CC2 simply adds a reference to the definition
at the location you picked.

This is very efficient because each reference only has to know its
location, color, layer, scale, rotation and the name of the symbol it refers
to. For the rest, it refers back to the symbol definition.

> The pre-drawn "City 1" symbol contains 53 entities and occupies
> 3.67 k of memory. However, 10 "City 1" symbols in a map only
> occupy 4.97 k, not the 36.7 k you might expect. This is because each
> symbol reference only takes 0.13 k (10 x 0.13 + the original 3.67 =
> 4.97).

How symbols use layers

So long as you think of symbols as two separate bits · the definition and
the reference · this is very straight forward.

Each reference is on a layer. If that layer is hidden, the whole reference is
hidden.

The entities within a symbol definition are also on layers. If any of those
layers are hidden, the affected entities are hidden in all references to the
symbol. By convention, the SYMBOL DEFINITION layer is always
visible, so you can safely draw entities on this layer if you want the
symbol's visibility to depend solely on the visibility of the reference
layer.

Example layer usage in an Infantry symbol definition:	And if the symbol is inserted on the FRENCH layer, this is how the symbol reference displays with various layers hidden:
The Infantry symbol is defined using the following layers 1. A crossed-box drawn on the INFANTRY layer: 2. plus a Data label on the DATA layer: **Data** 3. Gives a symbol definition for a typical Infantry symbol: Data When the symbol is used in a map, this symbol definition is invisibly added to the map, creating any necessary layers.	Symbol reference with all layers visible: **Data**
	With the DATA layer hidden but FRENCH and INFANTRY visible: The Data label is hidden.
	With the INFANTRY layer hidden but FRENCH and DATA visible: **Data** The infantry symbol is hidden.
	With the FRENCH layer hidden but INFANTRY and DATA visible: The layer on which the reference was inserted is hidden, so the whole reference is hidden.

Creating a symbol

I want to focus on the concepts of symbols, rather than a complex shape, so we will draw a simple Infantry symbol, suitable for wargame maps. Your symbols can be as complicated as you like.

We will create the infantry symbol so it has a background drawn in the
current color when inserted. This will make it easy to distinguish between
the infantry of each army.

1 > Start a new map based on a 1000 x 800 mile template.
   CC2 symbols are defined so that, with a symbol scale of 1, they
   are correctly sized for a 1000 x 800 mile map. You should
   therefore create overland symbols on this map size.

2 > Set the current layer depending on how you want the next entities
   you draw to behave when the new symbol is inserted:

Layer on which entity was originally defined:	Result:
SYMBOL DEFINITION	The SYMBOL DEFINITION layer should always be visible so, if the this entity will always be visible when the symbol is inserted.
Any other layer, e.g. INFANTRY	No matter what layer is current, the entity will be inserted on the INFANTRY layer (the layer will be created if it does not already exist). When the INFANTRY layer is hidden, this entity within the symbol will be hidden.

3 > In this case, click the **Layer** indicator, add a new layer called
   INFANTRY and set it as the current layer.

4 > Insert a single mountain symbol into the map,
   The mountain gives us something with which to compare the size
   of the new symbol. It won't be included in the symbol.

5 > Change the other drawing settings as follows:
   ✓   **Line Width**   2
   ✓   **Fill Style**   **Solid**
   ✓   **Color**   **Black**

6 > Draw a box , its first corner on a grid point near the mountain,
   its second corner @40,25.
   Measuring 40 units across and 25 up, the box is approximately
   twice as big as the single mountain.

7 > Draw two lines forming a cross in the box.

To place these line precisely, either enable **Attach** and set it to **Nearest endpoint,** or use the **Endpoint** modifier.

Varicolor entities that change color on insertion

This basic infantry symbol, a crossed box, is now drawn. To identify different armies, we will add a varicolor box in the back ground which, when the symbol is inserted, is drawn in the current color.

This symbol is simple, so it only has one varicolor entity. In your own symbols, you can have as many varicolor entities as you want.

Continued from previous instructions.. .

8 > Change the **Line Width** setting to 0.

9 > Draw a **Box** over the symbol.

The line width is now 0, so the center of the box is filled. The previous box has a non-zero line width, so the fill style was applied to the box outline.

The box completely obscures the rest of the symbol.

10> Click **Symbols Menu >> Change to Sym Color.**

The Command Line reads *select entities* :.

1 1 > Select the last **box** by **Prior,** then **Do** It.

The box is now varicolor. It is currently white but, when the symbol is inserted, it will be drawn in the current color. It still obscures the rest of the window.

12> **Send to Back** again selecting by **Prior** then **Do It.**

The   background box is now behind the rest of the symbol.

Adding attributes

Attributes are pieces of textual information attached to symbols. If a symbol includes attributes then, every time it is inserted, you will be prompted with dialog boxes asking for the values.

You can use **Symbols Menu >> Extract Attributes** to list all attributes in a map and save it in a text file for use with other applications.

Attributes must be added to the symbol before it is defined, as they are a part of the symbol.

Continued from previous instructions...

13 **>** Click the **Text Properties** icon ⊤ and change the default text settings to **Arial** font, justified **bottom-left,** height 6 and stretch **1.**

14 **>** Select **Symbols Menu>> Define Attribute...**
You **see** the Text Attribute dialog box:
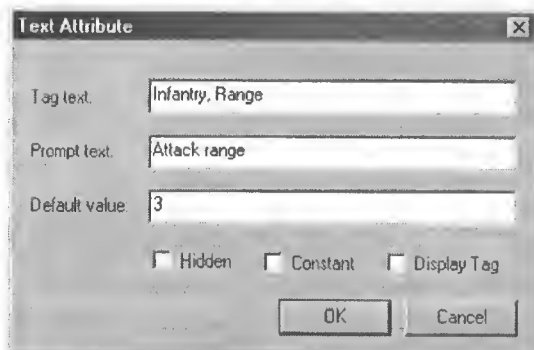
- **Tag text** is the name of the attribute that will be displayed with extracted information.

- **Prompt text** is the dialog box prompt you will see when inserting the symbol.

- Tick **Hidden** if you don't want the attribute to display next to the symbol. If an attribute is hidden, you can still extract it or see its value using **Info Menu >> List.**

- Tick **Constant** to fix the attribute's value to the default.

- Tick **Display Tag** if you want the attribute label to display, instead of the value.

15 **>** Set the values in the dialog box as follows, then click **OK.**

    ✓ **Tag text**   Infantry, range
    ✓ **Prompt text**   Attack range:

✓ **Default value 3**

✓ **Tick boxes**   All clear

The Command Line reads *Location* : . The text is using the default text properties, which is why we set them before adding the attribute.

16 > Place the attribute at the bottom right corner of the symbol.

Infantry, range

Adding control points

Control points create "smart symbols" which work intelligently other straight-edged CC2 entities in that both the symbol and the entity are aware of each other during insertion. This awareness allows the entity to automatically create cuts to accommodate the symbol, or have the symbol align or scale itself to fit cleanly.

Continued from previous instructions. . .

17> Click Symbols Menu >> Add Control Points.

The Command Line reads *1st point* : and then *Next point* . The positioning of these two points is important.

Firstly, the two points define a vector that is used to determine smart symbol's alignment with other entities. During placement, this vector remains parallel to the entity, reorienting the symbol accordingly. The alignment vector also tells CC2 how to "flip" the smart symbol during insertion.

18 > Using the **Midpoint** modifier , place the control points at the points shown:

Infantry, range

You see the Control Points Effects dialog box:

Control Points Effects   ☒

☑ Align on Insertion
☐ Cut on Insertion
☐ Scale Y to Fit
☐ Keep DynTrak Scale
☐ Offset from Place Point

OK
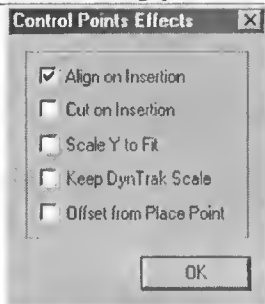
- **Align on Insertion** means the symbol will auto-rotate to align with straight edges underneath the cursor.

- **Cut on Insertion** means the symbol will automatically break any linear entity on which it is inserted. The break will occur at the control points.

- **Scale Y to Fit** forces the smart symbol to resize in the "vertical" direction relative to the width of the line under the cursor. At the same time, the symbol's X scale becomes 1 – irrespective of the current **symbol** scale. **Scale Y to Fit** only takes effect when inserting into entities with width > 0.

- **Keep DynTrack Scale** is used in conjunction with **Scale Y to Fit.** It forces the X scale to stay at the current symbol scale, changing the proportions of the symbol.

- **Offset from Place Point** inserts the symbol parallel to the initial placement point and orientation. The exact placement is visually determined from the dynamic cursor. This overrides the **Cut on Insertion** check box option (i.e., offset symbols will not cut the locating entity.

19 > Click **Align on Insertion** only, then click OK.
The control vector is drawn. It will not display in the inserted symbol. To edit the control point settings, use **Edit** and click on the control vector.

Defining the symbol

The symbol you have drawn contains varicolor entities, attributes and Smart Symbol control points. It's a pretty busy symbol, so you can see why I wanted to keep the shape simple!

Your symbols can be as complex or simple as you like. Symbols do not have to include control points, nor do they have to have varicolor entities and nor do they need attributes. All they absolutely need is a few entities. The rest is up to you.

Once you've created all the entities you want in your symbol, you combine them as a symbol definition.

Continued from previous instructions...

20> Select **Symbols Menu >> Define Symbol.**
The Command Line reads `Symbol name : .`

21> Type Infantry then press ⌨️.
The Command Line reads `symbol origin : .`

The symbol origin will be the insertion point for copies of the symbol. The point you choose depends on how you will normally pick the point to place the symbol. For the infantry symbol, I would pick the intersection of the cross.

22 > Use the **Intersection** modifier ☒ to select the middle of the cross.
The Command Line reads `Select entities (0 picked):.`

23 > Select the infantry shape, including the control points and attributes then **Do It.**
The symbol disappears! Don't worry though, it is now defined in the map as a symbol.

24 < Click the **Drawing** button `Drawing` at the top of the Catalog Window.
The Catalog Window displays the symbols used or defined in the current drawing. The list includes any symbols placed in the drawing, any symbols used by symbol fill styles and, at the bottom, our new Infantry symbol!

Depending on the current color, the symbol probably looks like a black blob.

25 > Select another current color instead of black.
Oh the joy of varicolor!

Creating and editing symbol catalogs

Any map can be saved as a symbol catalog. The symbols in the map are then available in the new catalog, in the order they were originally inserted.

Making new symbols available as a catalog

Continued from previous instructions...

26 > Select **File Menu >> Save As.**
> You see the Rename and Save dialog box.

27 > From the **Save as type** list, select **Campaign Cartographer 2 FSC Symbol Catalog.**

28 > In the **File name** box type Temp.

29 > Select CC2's **Symbols** folder, then click **OK.**
> The symbols in this map are now available as a symbol catalog called **Temp** in CC2's **Symbols** folder.

However, the point of a symbol catalog is to combine groups of symbols so they are convenient to use and easy to find. Our **Temp** symbol catalog contains 22 predefined symbols and 1 new Infantry symbol. It hardly qualifies as a convenient to combination.

Creating convenient symbol catalogs

This requires a new map that contains absolutely no symbols. You then pick the desired symbols from existing catalogs, hence adding them to the map. When all the symbols have been added, use Save As to save it as a new catalog. The symbols will appear in the catalog in the order they were   inserted.

---

1 > Click the **Template** icon and select **Symbol Catalog.FCT** from **CC2's Symbols\Maps** folder.
> This template is specifically for creating overland symbol catalogs. There are also similar templates for dungeons and cities.

2 > Click **New** to start a new map.
> The new map is created, based on the **Symbol Catalog** template.
> It has a green background to remind you that it is a catalog, not a map to be drawn on.

3 > Click the **Drawing** button at the top of the Catalog Window.
> The Catalog Window shows the symbols defined in the map. It should be blank.

4 > Click the **Catalog.,.** button and select the catalog that contains the first symbol you want. In this case, this is **Temp.FSC,** containing the Infantry symbol.

   The contents of the **Temp** catalog are shown in the Catalog Window.

5 > Scroll down the catalog and click on the Infantry symbol, so it is attached to the cursor.

   The symbol definition has now been added to the new map. If you want, you can place the symbol in the map as a reminder, but this is not strictly necessary.

6 > Using the **Catalog...** button to open other catalogs in the Catalog Window, click on any other symbols you want to add.

7 > To complete the catalog select **File Menu >> Save As** and save the map as a file of type CC2 FSC Symbol Catalog in an appropriate folder.

Cloning and editing symbols

You can easily edit the symbol definitions in any catalog or map. After you have edited a symbol, any references to it (in the current map) will show the edited definition. If you want a new symbol similar to an existing one, you can clone the existing symbol then edit it.

1 > Open **Tutorial 16.FCW** from CC2's **Tutorial** folder. (You may need to set the file type back to CC2 FCW drawing.)

   The tutorial map loads.

2 > Click on the **Drawing** button at the top of the Catalog Window. The Catalog Window shows the symbols used in the drawing. The 5th down is called **Monolith.**
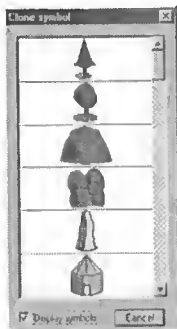
3 > Select **Symbols Menu   Clone Symbol.**

   You see the Clone Symbol dialog box showing you the list of symbols used in the map. At first, the list is textual but, if you click the **Display Symbols** option, you will see the symbols themselves.

4 < Click on the **Monolith,**

   The dialog box closes and the Command Line is now asking `Symbol name : .`

5 > Type the name for the new symbol, Trilith, then press ⌖Enter⌖.
   The Command Line reads *New window corner:.*

6 > Click opposite corners of a new drawing window in which you will
   edit the new symbol.
   The Trilith symbol is displayed in the new window. It can now be
   edited like any other shape.

7 > Click copy ⌖icon⌖ and select by **All, Do** It.
   All the contents of the Trilith window are selected and ready to be
   copied. The Command Line reads **Copy from point:.**

8 > Click a reference point in the middle of the monolith.
   A copy of the monolith is attached to the cursor, ready to be
   placed.

9 > You could scale or rotate the copy by eye, using ⌖Ctrl⌖ and ⌖Shift⌖ keys.
   Instead, type 0.7 then press ⌖Enter⌖.
   The copy is scaled precisely by 0.7. It is 70% of the original size.

10 > Place two copies of the monolith behind the original. It may help to
   zoom out a little.
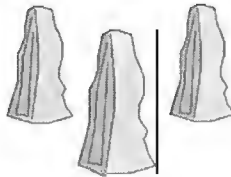
11> Click the close button ⌖X⌖ m the top right of the Trilith symbol
   window, then click **Yes,** it is OK to keep the changes.
   The Trilith symbol is now added to the symbols in the drawing,
   and shows in the **Drawing** view of the Catalog Window.

Editing an individual symbol in a map

When you place a symbol in a map, you are only actually placing a
reference to the symbol definition that CC2 keeps in the map file. You
can not edit the entities within the symbol, without editing the symbol
definition, which edits all occurrences of the symbol.

To edit a symbol, **Explode** it first. **Kerbang.** When you explode a symbol,
CC2 replaces the symbol reference with actual copies of the entities in the
symbol, which can then be edited as you wish.

Exploding all symbols in a map greatly increases file size and should be
avoided.

Removing unused symbol definitions

As soon as you click on a symbol, a copy of its symbol definition is added to the map. Even if you cancel the symbol, explode it, or later delete it, the symbol reference remains in the map. This isn't a disaster, but it does make the map bigger and more cumbersome than it needs to be. When you finish a map, it is a good idea to remove (purge) unused symbol definitions.

1 > Select **Symbols Menu >> Purge Symbol.**
   You see a dialog box asking you to confirm. This action can not be undone.

2 > Provided you haven't just created a symbol that's not yet saved in a catalog, click **Yes.**
   Any symbol definitions that don't have a symbol reference within the map are deleted.

   If you click the **Drawing** button at the top of the Catalog Window, you can see the purged list of symbol definitions. It is likely that there will **be** some symbols, such as **Farmland, Fen** and **Marsh,** that you don't recognize, and that aren't obviously used. In fact these symbol are referenced by symbol fill styles, which is why they aren't deleted. To get rid of them, you have do delete the relevant fill styles first.

It is a very bad idea to Purge symbol catalogs – they are full of symbol definitions that haven't been used within the drawing!

Converting your Campaign to CC2

If you use CC2, the chances are that you are an experienced gamer. You either have complex and detailed campaign maps on numerous pieces of paper, or you are starting a new campaign from scratch.

Converting existing maps

If you have many existing maps, converting them from paper to CC2 format can be a mammoth task. To make it achievable, try not to get bogged down by faithfully reproducing every minute detail.

I am not suggesting for a moment that you lower your standards, merely that since all maps have errors, the old ones were slightly wrong, and the new CC2 maps become the "official", accurate maps of your campaign.

And given the chance to redo your maps, you shouldn't be afraid to modify your campaign with any ideas inspired by the process, Even the most well-inhabited lands are unlikely to have been thoroughly explored. You can add new features off the beaten track: new islands cove and bays, Underearth entrances and lairs.

Existing maps with hex or square grids

If your maps are drawn on hex or square grid paper, you can recreate the same grid in your CC2 maps and use it to locate the map features. It doesn't matter if the copy isn't exact, as long as each square or hex on the new map contains the same information as the original, small differences don't matter. Once your new map is complete, you can treat it as the official record of your world.

Existing maps without hex or square grids

Add a hex or square grid to your original map by photocopying it onto paper already printed hex or square grid created by CC2. You can then use the method described above.

Using scanned images or other electronic graphics

If you have a scanner (or access to one) or you have created maps in another graphics package, you can place these on a CC2 layer then draw over them. This process is described in the section called "Bitmaps, Scans and Exports".

Work from the top down

From existing maps

If you have existing maps to convert, these are most likely in a pile of rough sketch maps with a few carefully hand-drawn maps, Start with the map that covers the largest area. Measure its real world dimensions, then

select a suitably sized template and start a new map. Once your top level map is complete, copy sections relating to the more local maps you have,

... or starting from scratch

In some ways it is easier to start from scratch. Drawing new maps with CC2 is always going to be easier than trying to copy every detail of existing   ones.

The recommended approach is to start with a world-scale map which will provide a consistent base for more detailed overview maps. Before creating the world map, select a large current template, such as 10,000 miles x 8,000 miles.

. ..work from the top down

The overview map should only show overview detail, such as mountain ranges and the greatest rivers. These maps are generally not for players, and are not normally used in day-to-day adventuring, except to get a vague idea of where distant places are. If you're starting from scratch, you don't have to draw all the continents straight away,

This map is based on a 10,000 x 8,000 mile template.
At the moment I only need one continent. I drew the
coast of another, just in case.

Once you've drawn the overview map, decide which region your next map will be and measure its dimensions. For example, my next map will be the southeastern region of the top continent. The new map area, shown here, will be approximately 2,000 miles by 1,600 miles.
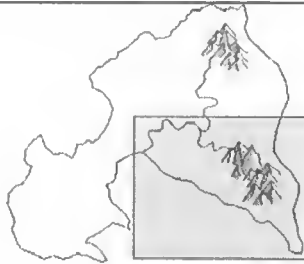
Use ⟦Ctrl⟧⟦C⟧ to copy the entities from the world map. Select the entities with a window containing the entire region (this will also select entities that cross the window). Place the clipboard origin where the bottom left of the next map will be.

We've already decided that the new map size must be 2,000 across and 1,600 up. Coincidentally, this is one of CC2's standard template sizes. Select the appropriate current template, and create a new map.

Use ⟦Ctrl⟧⟦V⟧ to paste the clipboard into the new map. You set the clipboard origin to the bottom left of the region, so the insertion point is a straight-forward (0,0). If necessary, drag the pasted copy to adjust its position. You are now working from the same base as the larger map, so you know you are being consistent.

At this time, it is a good idea to create links between this map and its parent. This way you can navigate between the two maps without even remembering their names. In time, you will have a complete linked atlas.

Much of the pasted map is outside the border, and must be cropped. To do this, edit the polygons that form the coastline. Increase the detail of the coastline with Fractalize or manually. To detail the mountains, add a background to the mountainous region, erase the original mountains, then add new symbols, guided by the mountain background.

Any other symbols in the map will now be too big for the new map size. In going down from 10000 across to one 2000 across, they need to reduced to 20% of their original size. You can scale symbols using Symbols Menu > > Scale Symbols. To reduce to 20% of the original size, set the scale value to 0.2.

Mapping from the bottom up

An island is a great starting point for a campaign. It naturally limits where the players can go, so you don't have to create a whole campaign world all at once.

As your campaign grows, you will want to create maps covering greater areas. To remain consistent between maps, copy the detailed map into the next larger one, then remove detail and scale-up the symbol size.

To reduce detail in the coastlines, type **REDN** then press ⌅. REDN is a text only command, and is short for "reduce nodes". Select a path and it will remove nodes, reducing the detail.

Varying your maps

A well-produced map can be a superb visual aid and makes a change from hordes of gold or magic as a reward for a well-accomplished mission. Different characters will have knowledge of different areas of land and posses different kinds of information about that land. A ranger could perhaps draw a map that has details of flora, fauna, wilderness trails and good water, but not even mark on a relatively local city. A dwarf could produce a detailed map of mountainous terrain, mineral resources and giants' lairs, but consider a forest not worthy of note.

Some characters will be semi-literate and only a few will have any idea of the shape of the continents or even if the world is round or flat.

To allow for these discrepancies, whilst reducing your drawing time, you should use CC2's layers to produce a variety of maps from one map. Once you have designed the complete version of an area with political boundaries, mineral resources, structures, sites of interest and all geographical features, you can then decide how much information each of the characters would have available to them. You can hide layers, temporarily erase or change features, move symbols or add new symbols to provide conflicting information for the party.

Using a touch of imagination

When you are copying your old maps or producing new ones, include new features that you have not yet defined or explained. As the campaign world is renewed, each undefined feature can be made to fit into the whole. What's that strange fortress doing in the middle of the desert? Perhaps it's all that's left of a mighty city crushed by drought and still inhabited by spirits. An evil temple in the midst of a good area? Keep that one on your map but change it to a friendly wayside inn on the players'.

The creation of maps can be the inspiration for adventures.

Keeping your maps up-to-date

If you make things up whilst playing, sketch them onto you CC2 map print-out. You can add the details in CC2 later. If you have to prepare a map quickly, create a rough map in CC2, adding only important sites. Add details during the session then redraw the CC2 map after the session.

You can also use your maps to keep a track of major troop movements. Freeze the map apart from the GM only layer, insert symbols representing each type of troop. Move them as required.

H

I

J

K

L

The Status Bar (at the top of the Display Window)

T: 700.00,840.00		P:0.000 mm	W: 10.00	L: BLDNG (HOUSE 1)	LS: Solid ...	FS: Solid

Tracking Indicator	Color Indicator Pen Thickness Line Width Indicator	Layer Indicator	Line Style Indicator	Fill Style Indicator
Displays the cursor co-ordinates. Click to cycle between absolute, relative and polar tracking.	Click to change the current setting.	Click to change layer settings.	Click to set the current line style.	Click to set the current fill style properties.

Catalog... Drawing	**The Catalog Window**

The Catalog Window

Load new symbol catalogs with the catalog shortcut icons, or by clicking **Catalog,..**

Click Drawing to show the symbols used in the drawing instead.

Right click over the Catalog Window to swap between normal and full-screen view.

Click symbols then place them on the map.

To **resize** symbols either:
- ✓ Press [Ctrl] while moving the mouse slowly forward or backwards (if Snap is enabled, the resize will be jerky), or
- ✓ Right-click then type exact values for the X and Y scale.

To **rotate** symbols either:
- ✓ Smart Symbols automatically align to edges under the cursor.
- ✓ Press →, ←, ↑ or ↓.
- ✓ Press [Ctrl] and [Snap] together while slowly moving the mouse.
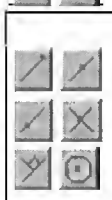- ✓ Right-click then type an exact value for the rotation angle.

To **stop** placing a symbol either:
- ✓ Click another symbol or icon,
- ✓ Right-click then click Finished.
- ✓ Press the Esc key.

(Catalog symbols shown in sidebar: City 1, ty 1, Walle, City 2, ty 2, Walle, City 3, City, Evil, Town 1)

The Zoom icons

Let you "zoom in" to get a close-up view of an area of your map or "zoom out" to see more of the map at a reduced size..

The Modifier icons

Place points precisely relative to existing entities, such as the map border. Whenever the Command Line reads point, you can use a modifier. There are more listed on the **Modifiers** menu.

The Map icons

For adding landmasses, roads, rivers, contours, borders and hex grids.

Each icon changes the current drawing settings to suit, then starts drawing using an appropriate drawing tool.

For non-standard shapes, click a Map icon then pick a new drawing icon.

The catalog shortcut icons

These are for drawing different types of map feature. They each load a different catalog into the Catalog Window, and change the current drawing settings and layer. Hold the mouse over each icon to see its name.

The Command Line and Button Bar (at the bottom of the Display Window)

Command [WALL]	→	Grid	Ortho	CsrSnap	Snap	Attach	Lock

Command Line	Tools button	Ortho button	Grid, Snap & CsrSnap buttons
Says what CC2 needs next. The word in brackets is what CC2 will do if you right-click or press [Enter]. You can type in the text equivalent of any command, numbers, distances or coordinates. For example: LINE 10, 0 @20', o draws a line from (10,0) at 20 feet across and 0 up.	Controls which icon bars and screen features are visible.	When depressed this forces lines to be horizontal or vertical.	When Snap is enabled, you can only place points on the grid. When **CsrSnap** is enabled, the cursor jumps between snap points. When **Grid** is enabled, the grid is visible as an array of black dots. Right click on any of these buttons to change the current grid settings.
	Attach button		
	Locks points to other entities, as per the current attach mode. Right-click to change attach mode.		